Exhibit 10

RIO
TINTO
MINERALS

2008
ANNUAL REPORT FOR MINERAL RESOURCES AND ORE RESERVES ESTIMATES

ARGONAUT MINE
LUDLOW, VERMONT, USA

Product Group:	Diamonds & Minerals
Business Unit:	Rio Tinto Minerals
Date:	February-2009
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EXHIBIT
Paulton-28
Date: 3-18-19
MLG, CSR, RPR, CRR

Section 1.0
Executive Summary

This report summarizes the estimated mineral resources and estimated ore reserves for the Argonaut Talc Mine, Ludlow, Vermont, USA as of 31 December 2008. The numbers quoted do not meet JORC, SEC, and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status. This report simply outlines the procedures, processes, and steps employed to maintain current standards in the areas of orebody management at the Argonaut Talc Mine.

Table 1: Estimated Mineral Resources for the Argonaut Talc Mine

Estimated Resource Category	Est. Measured Resources (000 short tons)			Est. Indicated Resources (000 short tons)			Est. Inferred Resources (000 short tons)			Est. Total Resources (000 short tons)
	Alpha Ore	Mine Run Ore	HB Ore	Alpha Ore	Mine Run Ore	HB Ore	Alpha Ore	Mine Run Ore	HB Ore	
Totals as of EoY 2008	53*	253*	146*	6*	58*	18*	43*	1,427*	32*	2,038*

The Argonaut Mine's estimated mineral resources decreased by 5,217,713 short tons from 7,255,564 short tons reported at the end of year (EoY) 2007 to 2,037,851 short tons at EoY 2008. This decrease in estimated mineral resources is attributed to the following changes:

- Change in methodology of calculating resources. After the March 2008 peer review, all potential ore material outside the life of mine design is considered mineral inventory and is not reported as part of this report.
- Total ex-pit ore production during 2008 was 94,194 short tons.

Table 2: Estimated Ore Reserves for the Argonaut Talc Mine

Estimated Reserve Category	Estimated Proven Reserves (000 short tons)			Estimated Probable Reserves (000 short tons)			Stockpiled Reserves (000 short tons)	Total Est. Reserves (000 short tons)
	Alpha Ore	Mine Run Ore	High Brigh Ore	Alpha Ore	Mine Run Ore	High Brigh Ore		
Totals as of EoY 2008	611*	2,911*	1,681*	74*	670*	204*	39*	6,188*

The Argonaut Mine's estimated ore reserves at EoY 2008 increased 165,457 short tons from 6,022,803 short tons at EoY 2007 to 6,188,260 short tons at 31-December-2008. The increase is attributed to the following:

1) Change in methodology in calculating resources and reserves after the March 2008 peer review. All material outside the life of mine design is now considered mineral inventory and not reported as part of this report.
2) A significant increase in reconciliation and recovery factors. In 2007, estimated recovery was 75%. Through improvements in reconciliation tracking; the total factor has been corrected to 92%.
3) Total ex-pit ore production during 2008 was 94,194 short tons.

Total ore mined during 2008 was 94,194 short tons with 93,119 short tons of waste mined. This equals 187,313 total short tons of material removed from the Argonaut Mine. Total ore mined in 2008 represents 1.5% of the total ore reserves. The end of year strip ratio was 1:1.01.

* The numbers quoted do not meet JORC and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

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Section 1.0 Fundamental Data

1.1 Property Location:

The Rio Tinto Minerals' (RTM) Argonaut Talc Mine and associated facilities are located approximately 3 miles from the town of Ludlow, in southern Vermont, USA (Figure 1) at an approximate elevation of 1,500 feet above mean sea level.

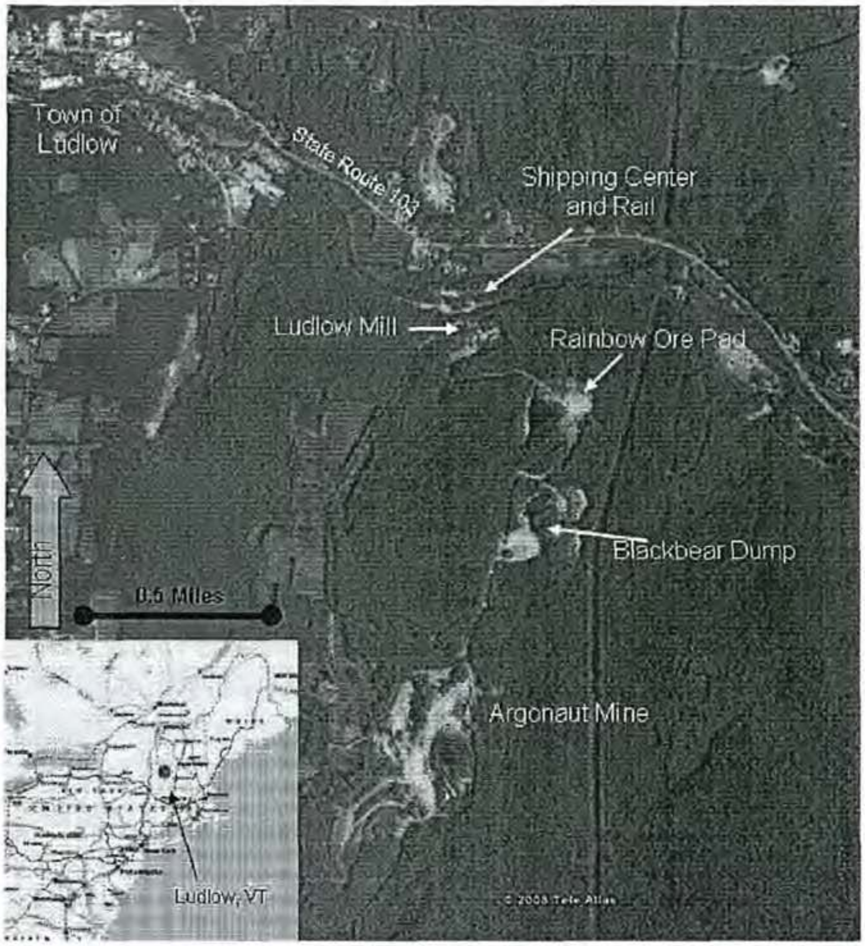

Figure 1: Site location for the Argonaut Talc Mine, near the town of Ludlow, VT, USA (image courtesy of Google Earth).

The Argonaut Mine is situated within the North-South trending Ludlow talc-carbonate trend, a localized trend of ultramafic rocks with associated lenses of talc-carbonate extending approximately 5 miles, just east of Ludlow, VT (Figure 1). RTM has historically mined at five locations along this trend but only the Argonaut Mine is currently active. Three of these past producing mines are still being used; Rainbow Mine has been converted to a water treatment pond and secondary ore storage pad while the Old Main Pit and the Blackbear Mine are now being backfilled as waste impoundments.

1.2 Property Tenure

Vermont operations consists of a talc mine, waste impoundment, mill, shipping center, truck yard, the Stone House mine office, and administrative building located on East Hill Road covering a total of 2,121 acres (858 ha.).

RTM owns 258 acres of surface rights, leases 445 acres, and owns 1,418 acres of fee simple land which includes all of the surface and minerals rights. The Argonaut Mine is an open pit talc mine located on 375 acres leased from Mr. Robert Smith, Jr. All current production is from the Smith lease which expires in 2032. Mr. Smith is paid a production royalty on a monthly basis.

The land directly south of the Argonaut Mine is leased to RTM under the Mackenzie lease which expires in 2012. Mackenzie is paid an annual payment for maintenance on the lease. RTM has a right of first refusal to purchase the Mackenzie parcel. Currently, no ore is planned to be mined from the Mackenzie lease and is outside the life of mine designed pit. The administrative offices, mill, and shipping center are located on fee simple land.

1.3 Property Boundaries

Appendix A contains a map outlining the current property boundaries. As part of this, Vermont Operations operates under the following permits:

- Vermont Land Use Act 250 Permit No. 2S0126, 2S0126-1, 2S0126-2, 2S0126-3, 2S0126-4, 2S0126-4A, 2S0126-5
- NPDES Permit No. 3-0348 (Title 10 V.S.A., Chapter 47, 1251 et. seq.)
- Underground Injection Control (UIC) Permit No. UIC-94-0002.A

1.4 Community Relations and Environmental Regulation

Environmental issues are managed by the onsite Environmental Supervisor. The environmental department maintains files containing all documents related to environmental approvals, including signed county, state, and federal permits. Hydrological issues are also managed by the environmental supervisor. Social issues are managed by a combination of the environmental department, in coordination with the site manager.

1.5 Deposit Type and Geologic Setting

The Argonaut orebody is a serpentinite-hosted talc-carbonate ore body. Talc resources are confined within the North-South trending late Paleozoic Ludlow talc-carbonate trend. This local trend is part of a larger ultramafic belt within the Appalachian Range that is continuous from western Newfoundland, Canada south to Alabama, USA. Along the Ludlow talc-carbonate trend, talc mineralization formed from the metasomatic alteration

of serpentinite bodies resulting in a relatively thick rind of talc-magnesite up to 500 feet thick around a core of serpentinite.

The Argonaut orebody appears to be fairly unique along the Ludlow talc-carbonate trend in that the orebody has been folded and/or faulted extensively. The degree of folding and/or faulting in this area has allowed an increased amount of metasomatic fluids to alter a greater volume of the host serpentinite to talc-carbonate. Typically the talc-carbonate lenses within the North-South trend tend to average less than 50 feet wide.

1.6 Deposit Dimensions, Production, and Expected Mine Life

The dimensions of the open pit as of 31-December-2008 are approximately 2,100 feet in length (N-S), 1,400 feet at the widest point (E-W) with a maximum depth of 300 feet. The Argonaut talc-carbonate orebody has the rough dimensions of 2,200 feet (N-S) by 1,500 feet (E-W) with an estimated maximum depth of the orebody to be between 500 and 700 feet from pre-mining topography. The orebody has two main limbs, each trending roughly North-South. The majority of mining activities are currently focused on the eastern limb of the orebody.

In 2008, mining activities produced 94,194 short tons of ore delivered to the Ludlow mill and stockpiles. An additional 93,119 short tons of waste were moved to either the Blackbear waste impoundment or used as backfill in the Old Main pit. Total material mined in 2008 was 187,313 short tons.

Using the current designs and ore reserves derived from the 2008 block model, at the current rate of production the expected mine life for the Argonaut Mine is estimated at 65 years.

Section 2.0 Data Collection

2.1 Deposit Definition

The Argonaut talc-carbonate orebody is defined by diamond drill core and air rotary drilling along with historical underground workings and surface geologic mapping. A total of 51,172 feet of drilling, both core and rotary chip, are used to define the Argonaut orebody. Figure 2 illustrates drill hole collar locations for both core and infill drill holes used during the resource and reserve estimation.

Diamond drill core holes consist of both vertical and angled drill holes, typically completed on 100-foot centers. Diamond drill hole lengths vary greatly, from a minimum of 68 feet to a maximum of 648 feet. To date, approximately 36,940 feet from 97 diamond drill core holes are used to help define the deposit. Core drilling programs have occurred sporadically with campaigns performed during 1972, 1973, 1974, 1989, 1998, 2001, 2002, and 2007. Core drilling, though expensive allows the greatest amount of geological information to be collected such as geologic structure, lithologic contacts, mineralogy, alteration, and geotechnical parameters.

As a supplement to diamond drill core, several infill drilling campaigns have been conducted using the onsite production air rotary drill rig. The air rotary infill drill holes consist of both vertical and angled drill holes typically drilled on 50-foot centers. Infill drill holes vary in depth from 10 feet to 58 feet total depth. To date, approximately 14,232 feet from 340 air rotary drill holes have been completed that are appropriate for resource estimation. Infill drill holes produce cuttings and chips which are logged for lithology and then assayed. The infill drilling does not yield as much data as diamond drill core but is much cheaper and does not require outside contractors.

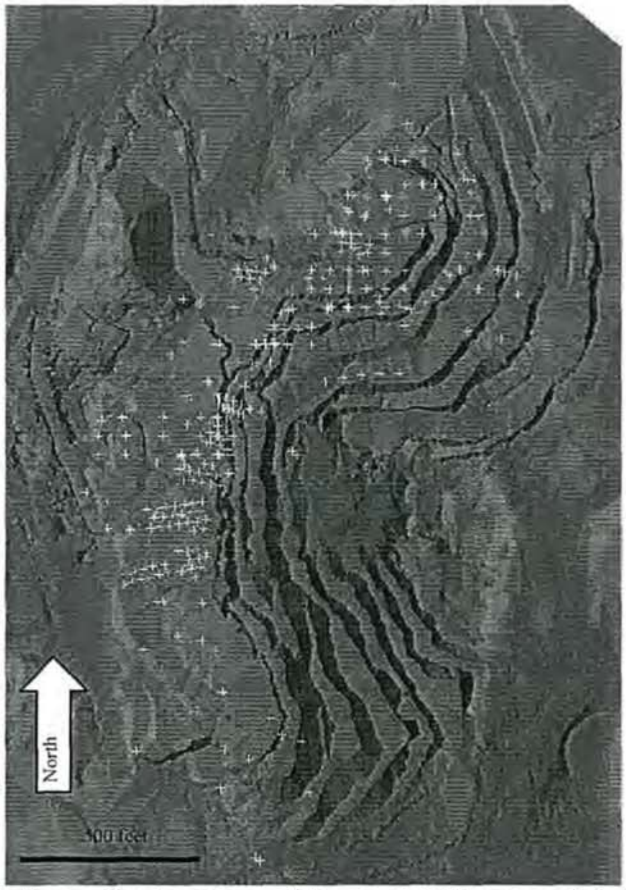

Figure 2: Surface collar locations of diamond drill core and air rotary drilling.

2.2 Geologic History

The complex geologic history of southern Vermont, USA is primarily the result of the Taconic, Acadian, and to some degree the Alleghenian orogenies. The oldest rocks in the area are Precambrian Grenville gneisses, quartzites, and marbles which were metamorphosed between 1,100 and 1,300 million years ago (Zen, et al., 1968). The same series of rocks extends into the Grenville province of the Canadian Shield to the north (Bain, 1936).

The region experienced a period of quiescence until about 650 million years ago, when crustal extension began to form the Iapetus Ocean (proto-Atlantic). As the Iapetus Ocean began to widen, it further separated North America from Africa, until about 450 million year ago. At this time, a shallow sea covered what is now New England and formed the shelf sequence of carbonate and siliciclastic deposits located in the Vermont Valley physiographic province. This Cambro-Ordovician shelf sequence grades eastward from finer to coarser-grained material that record an eastward transgressive marine environment. This marine sequence was later faulted and folded during the Cambrian Taconic Orogeny.

During the early Ordovician, ultramafic magmas where emplaced within the Iapetus oceanic crust within a spreading center or island arc prior to the Taconic Orogeny. The natural magmatic segregation of these ophiolites produced layered dunites and peridotites which were later hydrated and serpentinized during or shortly after cooling.

Prior to orogenic emplacement within the Taconic belt, carbonatization associated with carbon dioxide metasomatism altered the serpentinite host to a talc-carbonate body. Aluminum-rich zones within the serpentinite body were altered to chlorite, and schistose and gneissic country rock folded within the altered serpentinite became chloritized to form chloritic "cinders". Additional hydrothermal alteration along the body margin between the talc-carbonate and the schist country rock produced an enriched "steatite" zone and an alteration front of chlorite called the "blackwall" (see Figure 3).

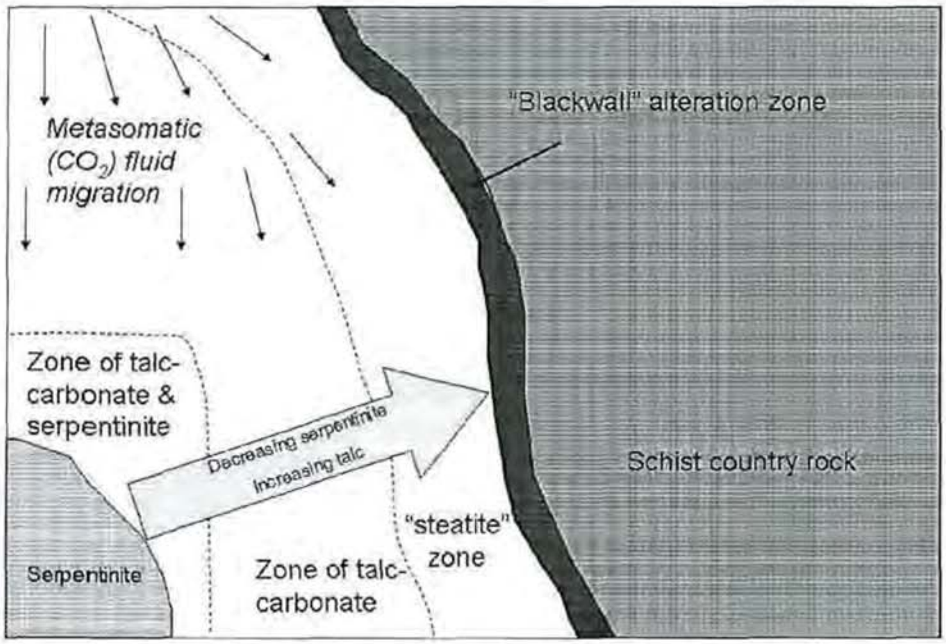

Figure 3: Diagram of lithologic relationships. The degree of metasomatism is represented by increasing talc content from the serpentinite core outward to the country rock. The interface of the fluids with the schist country rock caused an increased aluminum zone resulting in a chlorite-rich zone termed Blackwall.

Sometime after the talc-carbonate formation, a series of lamprophyre dikes have intruded the orebody. This dike swarm is possibly associated with the Ascutney Intrusion located to the East and is composed primarily of amphibole, chlorite, biotite, talc, and carbonate. The dikes vary greatly in width and persistence, frequently pinching out and intersecting one-another. The general attitude of the dike swarm is ~ 80-90 degree plunge with 25 to 40 degree dip. Within the Argonaut Mine, the lamprophyre dike swarm is visible on the eastern highwall within the talc-carbonate and serpentinite (see Figure 4: current geologic map).

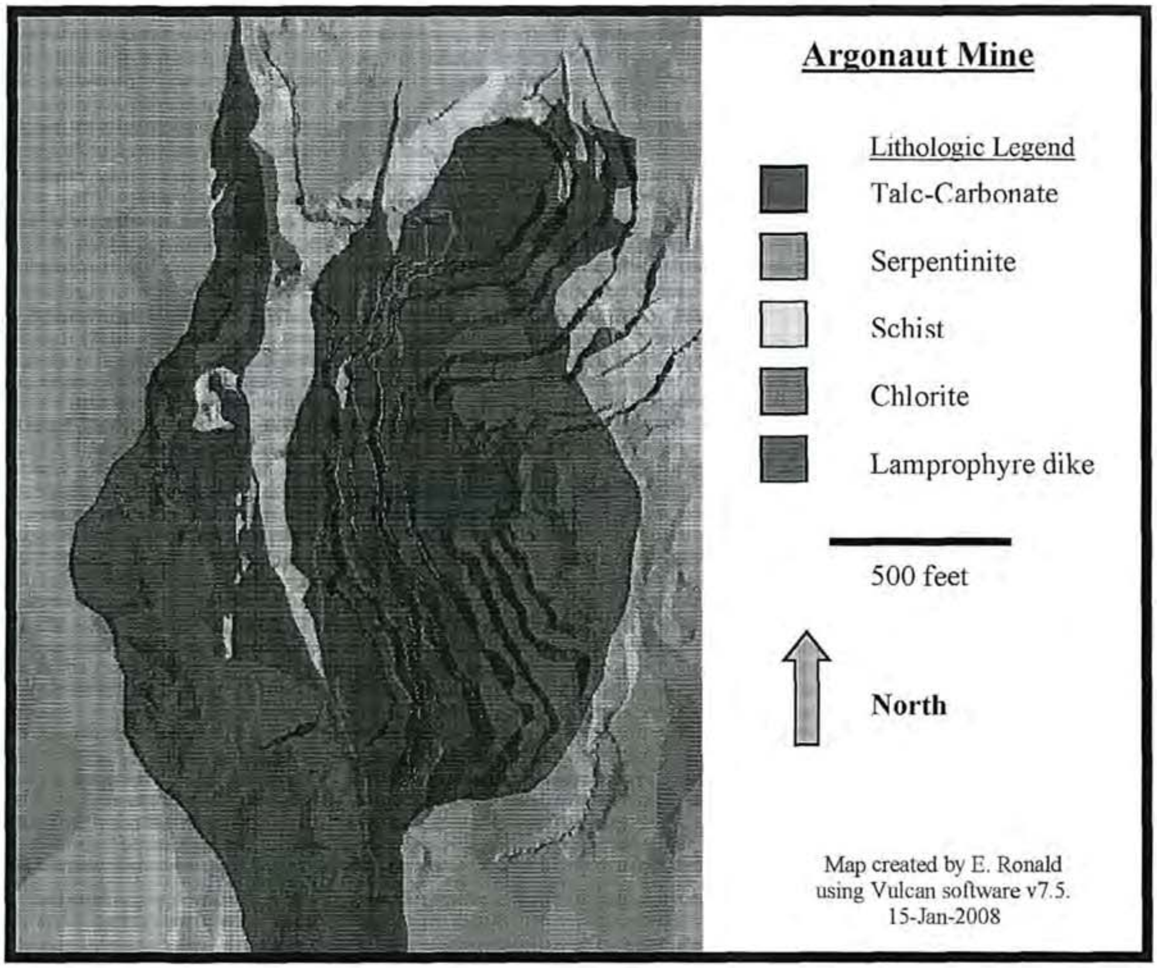

Figure 4: Geologic map of the Argonaut Mine with topography from 31-Dec-2007.

2.2.1 Alteration History

The Argonaut talc-carbonate orebody began as an ophiolite sequence composed of olivine-rich dunite or peridotite, which underwent serpentinization prior to or during overthrusting onto continental crust. The serpenitization process likely occurred at low temperatures, by means of the interaction of seawater with low CO_2 content under reducing conditions (Kretschmar, et al., 1986). During the pro-grade serpentinization of the olivines in the dunite, there was a loss of iron during the formation of lizardite, and this resulted in the precipitation of finely disseminated magnetite within the serpentinite (O'Hanley 1996). Serpentinization of the primarily olivine-rich rock is represented by the equation below:

$$3Mg_2SiO_4 + SiO_2 + H_2O = Mg_6Si_4O_{10}(OH)_8$$
$$\text{(Olivine)} + \text{(Silica)} + \text{(Water)} = \text{(Serpentinite)}$$

The carbonate metasomatism (i.e. carbonatization) likely occurred prior to orogenic emplacement within the Taconic belt. The metasomatism appears to have been concentrated in the zones around the serpentinite bodies from the country rock as evidenced by the alteration front evident along the serpentinite – talc carbonate interface with schistose country rock. Carbonate metasomatism involves the addition of CO_2 and the removal of H_2O. The conditions for this type of metasomatism have been experimentally defined at a low total pressure of 500 bars and a temperature around 450° C over a variable range of CO_2 (Johannes, 1969). The CO_2 is likely sourced from enriched solutions coming from the heating of carbonates deposited upon the subducted oceanic crust. The carbonate metasomatism process can be represented by the following equation:

$$Mg_6Si_4O_{10}(OH)_8 + 4SiO2 + 3CO_2 = 3Mg_3Si_4O_{10}(OH)_2 + 3MgCO_3 + 5H_2O$$
(Serpentinite) + (Silica) + (carbon dioxide) = (Talc) + (Magnesite) + (water)

The later carbonate metasomatism was likely concentrated along the margins of the dense serpentinite bodies. As regional tectonics folded and faulted the highly foliated country rock (schist), the much denser serpentinite bodies were likely rotated with little internal deformation, resulting in augen-like structure containing talc-carbonate surrounding these ultramafic serpentinite bodies.

As the CO_2-rich fluids began altering the host serpentinite, alteration halos formed. These halos are represented by decreasing percentage of talc inward toward the serpentinite core (see Figure 3). The "steatite" zone represents the outer margins of the original serpentinite body that underwent the greatest amount of metasomatism. As the metasomatic fluid interacted with the schist country rock, aluminum was leached from the country rock resulting in a dark, chloritized zone termed "blackwall". This zone contains significant shearing parallel to the contact between the talc-rich ore body and the schist country rock. Blackwall is an old miner's term derived from the dark color of this chlorite-rich schist zone (Chidester, Billings, and Cady, 1951).

2.3 Sampling

There are three types of samples collected at the Argonaut Talc Mine, two of which are used for resource validation purposes: diamond drill core ("core") and air rotary chip samples ("infill"). Only blasthole sampling is used for ore control and not utilized in resource estimation.

Core drilling is performed by offsite drilling contractors, historically using NQ-sized drill core (1.775 inches in diameter). Infill samples are collected using the on-site production air rotary drill rig. All infill samples represent cuttings from the air rotary drill using a 4-inch diameter drill bit.

For core samples, surface drilling is performed with approximately 100-foot spacing between other core holes. Historically, a regular grid has not been used for these drill holes. Instead, areas of future mining were delineated and drilled while best keeping to

the 100-foot spacing. Sampling of core has typically been done on 10-foot regular intervals only within talc-carbonate lithology. Rarely have samples been collected from schist and serpentinite.

The core samples are initially logged for lithology and geotechnical parameters by an RTM geologist. The original paper logs are compiled and stored onsite at the Stone House along with paper copies of all accessory drilling data. All drill core is then photographed and archived digitally. The core is then split in half down the long axis by lithology or 10-foot sampling intervals, with the remaining core retained onsite. The split core sample intervals are then crushed and pulverized at the Ludlow lab for further assay.

Assays on core samples are conducted at several laboratories depending on necessary turn-around time and staffing levels. The Ludlow laboratory will typically perform the following tests: screen test (alpine jet), LECO Insoluble content (Insol), Minolta color, arsenic by atomic absorption spectrophotometer (AA), and X-Ray Diffraction (XRD). The Denver laboratory will sometimes perform XRD samples and on occasion perform Polarized Light Microscopy (PLM) and Transmission Electron Microscopy (TEM) for fiber analysis. ALS Chemex Laboratories is used for elemental analysis using a four acid digestion method.

During infill drilling campaigns, either the driller or geologist will log the hole based solely on rock type and color. Samples are collected from both the course- and fine-grained collectors on the air rotary drill rig. Sample intervals are based on lithology or per 10 feet of drilling (equal to one drill stem). All original paper logs and associated data are stored at the Stone House.

The samples are then submitted to the Ludlow lab for processing and assay. Chip trays are created to retain samples on each interval and stored at the Stone House. The sample is then pulverized and tested onsite for: screen test, Insol, Minolta color, XRD, and arsenic. Figure 5 illustrates the sample flowsheet for infill drilling samples.

Figure 5: Core sample preparation flowchart.

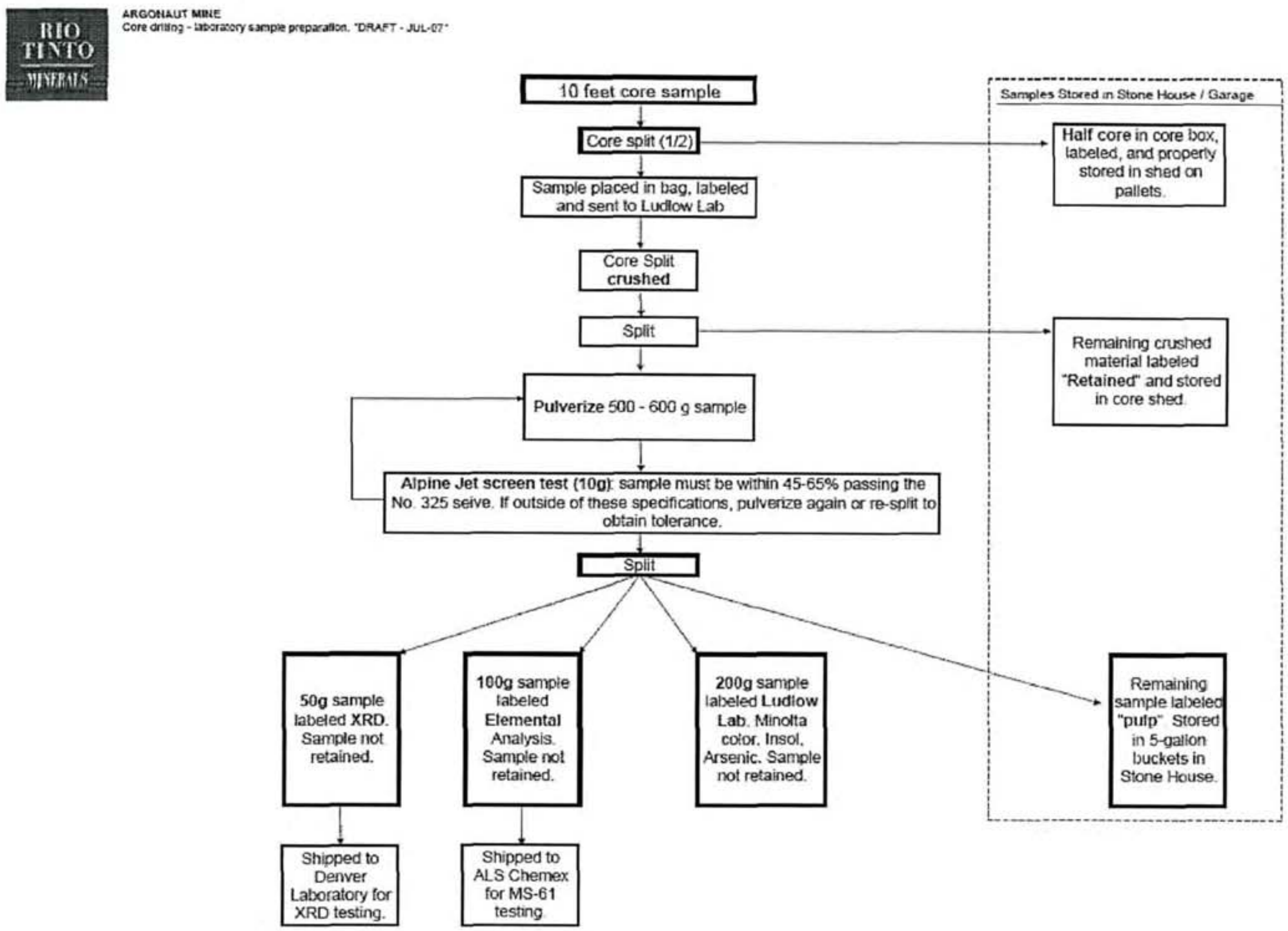

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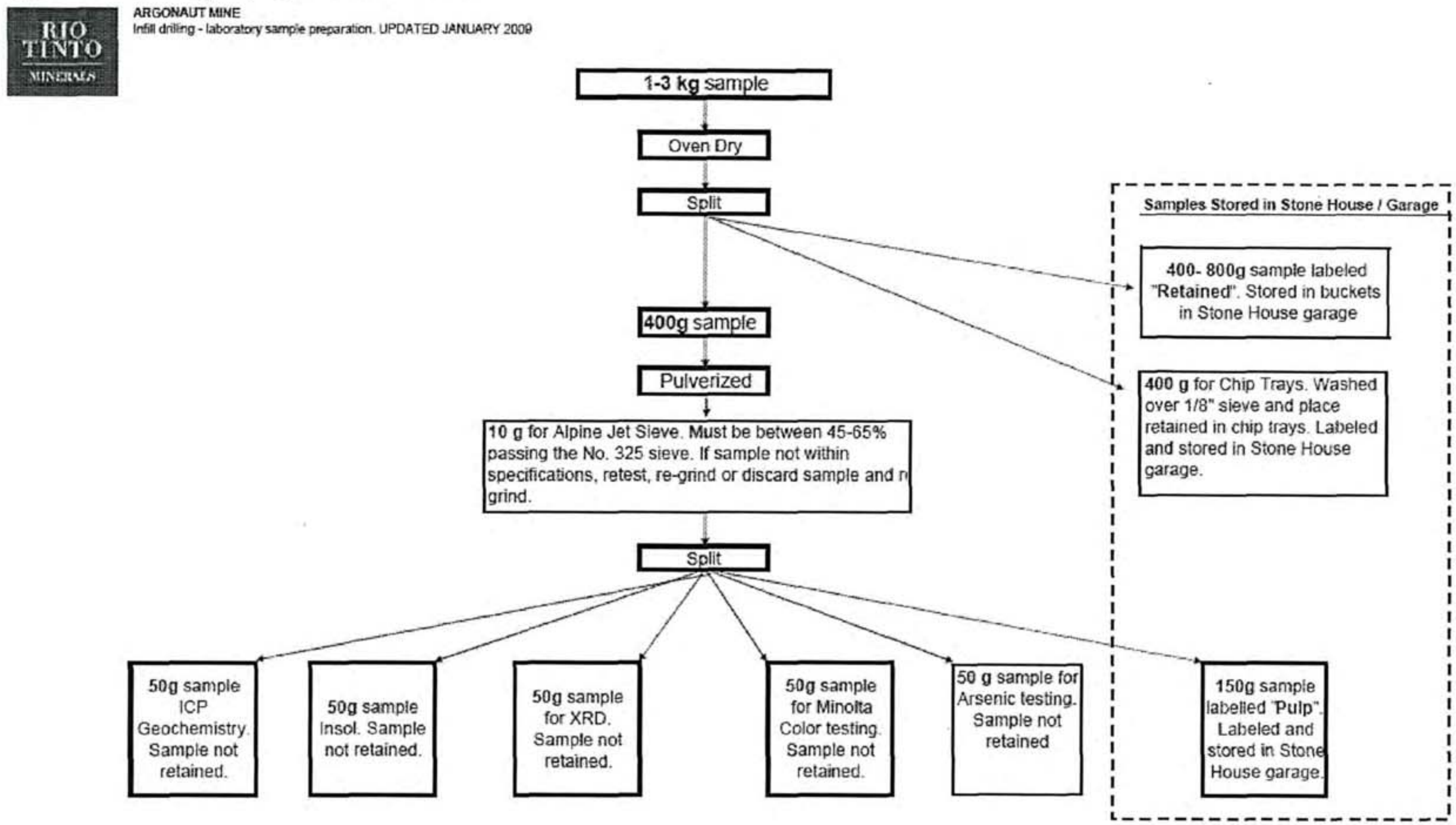
Figure 6: Infill sample preparation flowchart.



2.4 Quality Assurance / Quality Control

All samples collected during drilling campaigns are submitted to the Ludlow laboratory for initial tracking and assay. There are a variety of quality control procedures that can be used to measure repeatability and bias, including:

1) Duplicates:	Currently 10% of all drilling samples are duplicated for quality control. Only 2008 infill samples have followed this procedure.
2) Splitting:	All pulverized samples are split several times using a rifle-type splitter to obtain a representative sample of necessary weight.
3) Grinding:	All samples are ground so that 45-65% passing the No. 325 sieve. This degree of fineness is critical in determining Minolta color. This standard was implemented in 2007 to ensure consistency in color/brightness data.
4) Twinning of holes:	No twinning of drill holes have occurred to date.
5) Blanks:	No blanks have been used during historic analysis.
6) Round Robin:	A program was initiated in 2008 to begin sending duplicate drilling samples to the Denver laboratory for round robin testing.
7) Equipment calibration:	Ludlow laboratory equipment is regularly calibrated on a quarterly basis. Currently, the Arsenic AA machine and LECO are calibrated before every sample and the Minolta is calibrated before every shift.

All retained samples, splits, and pulps (pulverized splits) are labeled and retained onsite in either 5-gallon buckets for infill samples or in wooden core boxes for retained diamond drill core. All retained samples are stored on pallets in either the Stone House garage or the green core shed.

2.5 Specific Gravity / Bulk Density

Density data used in tonnage calculations were obtained from historic numbers in the 2002 Techbase Block Model. Through verbal communications, it was determined that these numbers were originally calculated from truck scales.

The numbers currently in use are:

Talc-carbonate:	0.0889 short tons per cubic foot (2.85 g/cc)
Serpentinite:	0.0852 short tons per cubic foot (2.73 g/cc)
Schist:	0.0815 short tons per cubic foot (2.61 g/cc)
Chlorite:	0.0889 short tons per cubic foot (2.85 g/cc)
Lamprophyre dike:	0.0889 short tons per cubic foot (2.85 g/cc)
Overburden/soil:	0.0578 short tons per cubic foot (1.85 g/cc)

Beginning in mid-2007, samples are being collected and tested for specific gravity. Currently, there is an insufficient amount of laboratory-derived specific gravity data to estimate the bulk density of each rock type. The future goal will be to sample and test several hundred samples for specific gravity per rock type that can then be averaged to give a more representative value of bulk density.

2.6 Data Management

All drilling data is maintained in MS Excel spreadsheet and Vulcan ISIS database on the local Vermont servers with a master drilling database held with the Denver mine planning group. Data on the Vermont servers are regularly backed up to tape drive in either Denver or Salt Lake City. There is currently no limited access to the spreadsheets as they are used by personnel in the Ludlow lab, Stone House, and at RTM's Denver office.

Assay data generated at the Ludlow lab are entered into the spreadsheets by lab personnel with hardcopies stored at the Stonehouse. The data are then retrieved by the Denver mine planning group where they are subjected to further validation and checks before being uploaded into a Vulcan Isis database. Data validation and cross checks are performed between assay, From/To, geologic logs and XRD data, and to determine general data gaps or inconsistencies.

All Vulcan files including ISIS databases are regularly backed up to the local Denver servers, which are in turn backed up nightly onto tape drives.

Section 3.0 Modeling and Estimation

3.1 General Modeling and Estimation

The geologic and block models are updated regularly depending on the amount of new information available. Once completed, the model update is reviewed by RTM personnel after which it is archived on a server with a detailed report stored on the modeling procedure employed.

The geologic and block models for the Argonaut Mine were updated during 2007. All resource modeling and estimations were performed using Vulcan software (KRJA/Maptek, Vulcan v7.0). A separate geostatistical software package, SAGE2001, was utilized in constructing variograms and validating data from the Vulcan geostatistics package. Previously, the block model was constructed using Techbase software with the last update being performed in 2002.

The initial steps taken in 2007 were to check all drilling data for validity and quality control. This data was then used to create an updated drill hole database that when combined with surface and underground data, was used in generating geologic cross sections. Once cross-sections were finalized across the entire orebody, solid triangulations were made for each rock type.

The solid triangulations were then broken down into blocks of various sizes spending on the necessary resolution needed. Finally, estimation was performed within the orebody geologic solids resulting in a fully populated block model.

3.2 Topography

The U.S. Geological Survey's (USGS) Andover quadrangle topographic map was scanned and digitized to obtain the pre-mining topographic surface. The pre-mining topography was used as a guide for each geologic solid created so that it could be extended above the original topographic surface.

Currently, mine personnel perform topographic surveys of the bench crests and toes on a regular basis. This data is compiled and a topographic surface triangulations are constructed showing the current ground level to date.

3.3 Data Validation and QA/QC

All the Argonaut Mine's drilling data had been stored on a multitude of MS Excel spreadsheets with backup hardcopies and original drilling data stored at the Stone House. To start, all existing spreadsheet-based drilling data was compiled so that each drill hole had collar data, total depth, survey data, a geologic log, and assay data. Over 300 drill hole data sets were found without complete geology logs, no collar data, survey data, or inconsistent and unrealistic data. All of these 300 drill holes were drilled during the

1990s with very poor data collection and retention. None of these drill holes were used in the construction and estimation of either the 2002 or the 2007 block model.

All historic drilling data was checked for accuracy against original hardcopy datasheets and entered into an Isis Database, part of the Vulcan software package. Frequently, the assay and logged geologic intervals did not coincide. In these cases, the geologic interval would be broken down into smaller intervals that matched with footages from the assay intervals.

In some cases, the logged rock type was not consistent with assay data. For example, the interval was logged as "chlorite" or "Serp & talc" but assay XRD data suggest that the interval is actually serpentinite. In these cases, in which it is difficult to accurately log rock type from rotary air cuttings, the geologic logs were adjusted to reflect the more accurate XRD data. This was typically only done for infill drill holes as it is much easier for a logger to determine lithology from core samples than from chip samples.

Data inconsistencies were also adjusted appropriately. In some cases, assay data was not entered as numerically, instead "too hot" or "below detection" was entered into the spreadsheet. In these cases either the sample was retested or omitted from the table.

Upon successful completion of data validation, a drill hole database was created (argnov2007.dhd.isis), plotted and visually inspected for accuracy and consistency.

3.4 Geologic Solid Generation

Geologic polygons were created using regional and site-specific geology data that included: drill hole database, surface mapping, and historic Luzenac and published work used as verification or as guidelines. Luzenac data used were historic cross-sections, underground maps, published maps and data, and the previous block model. Lithologic contacts were digitized using drilling logs from both diamond drill core and infill air rotary, as well as from underground geology maps.

A total of 56 cross-sections were created from West to East, each 50 feet apart. A west to east orientation was chosen due to the North-South trend of the orebody as well as to be perpendicular to historic eastward and westward angled drill holes. A limited amount of current surface geological data was available for use in polygon creation. In some instances, historic photographs were used in the determination of geologic contacts especially in the delineation of the lamprophyre dike swarm. Throughout the process of cross-section creation, effort was taken to stay true to the geologic relationships, known structural regime in southern Vermont, and to the genesis of the orebody.

Several North to South cross sections were also generated to verify the geologic contact data. Due to the preferred orientations of the drill holes and overall trend of the orebody, the North-South cross sections proved to be of limited use in extrapolating geologic data.

Only limited blasthole data was utilized in the construction of the geologic polygons primarily due to the lack of quality control on the blasthole database. The blasthole data could not be confirmed reliable therefore was used sparingly as merely a general guideline or as a check in areas with limited drill data. The blasthole geology logs were not used to adjust geologic contacts.

Upon completion of all 56 West to East cross-sections and each was checked for consistency between sections, geologic solids were created (Figure 7). This was done by triangulating each of the polygons together in a North-South direction. The resulting triangulated solids were cut against one another to maintain accuracy of the geologic contacts and ensure the triangulations were not crossing one another.

The final geologic solid triangulations used in modeling are named as follows:

TCSerp_C: Talc-carbonate and serpentinite lithologies in the central limb of the orebody. This geologic solid represents almost entirely talc-carbonate but does encompass small, irregular zones of higher serpentinite percentage.

TCSerp_E Talc-carbonate and serpentinite lithologies in a relatively smaller, disjointed limb of the orebody. This limb appears to be disconnected from the Central portion by faulting and folding. This geologic solid represents almost entirely talc-carbonate but within this body are small zones that may have elevated percentages of serpentinite (see *Serp_Talc* below).

TCSerp_W Talc-carbonate and serpentinite lithologies in the westerns limb of the orebody.

Serp_Knob Serpentinite located within the central limb of the orebody. This area was deemed to be entirely serpentinite, therefore a separate geologic solid was created.

Serp_West Serpentinite located within the western limb of the orebody. This area was deemed to be entirely serpentinite, therefore a separate geologic solid was created.

Serp_Talc Serpentinitic talc or talcosic serpentinite bodies within the TCSerp_E solid. These relatively small bodies represent zones of un-altered or partially altered serpentinite that has not entirely been converted into talc-carbonate.

Lamp Lamprophyre dike swarm. This triangulation is actually a combination of 22 separate dikes all of which are plunging and dipping in a similar direction (~ 80-90 degree plunge with 25-40 degree dip).

Chl Chlorite; either as "cinders" or "blackwall" alteration. This geologic solid is made up of 22 smaller, elongated, and discontinuous zones of chlorite. The majority of these chlorite zones are located within the eastern limb of the orebody.

Sch Schist country rock. This triangulation represents the metasedimentary country rock. Rock types may vary between gneiss to granofels but most commonly exhibits a schistose texture and foliations.

3.4.1 Domaining

Composite samples whose centroid falls within one of the above mentioned geologic solids have been assigned a particular geologic modeling domain (GEOMOD). These domains are then used to segregate drilling data into discrete populations for statistical analyses, variography, and for estimation of similar blocks for each domain.

The domains are classified as follows:

ts_e Talc-carbonate with trace serpentinite located within the *TCSerp_C* and *TCSerp_E* geologic solids.

ts_w Talc-carbonate with trace serpentinite located within the *TCSerp_W* geologic solid.

serp_w Serpentinite core within the western orebody limb. This domain corresponds to the *Serp_West* geologic solid.

serp_knob Serpentinite core within the eastern orebody limb. This domain corresponds to the *Serp_Knob* geologic solid.

serp_talc Small bodies of high serpentinite baring talc-carbonate located within the ts_e domain. This domain corresponds to the *Serp_Talc* triangulations.

lamp Lamprophyre dike swarm located within the *TCSerp_C* or the *TCSerp_E* geologic solids.

chl Chlorite mineralogy, this domain represents material that is either chloritic "cinders" or the blackwall alteration. This material domain is not spatially confined to any one geologic solid.

sch Metasedimentary rock, primarily schist but possibly phyllite to gneissic texture. This material domain represents country rock..

ug_air Underground workings, this material domain represents void space in the block model from the historic u/g workings.

xwaste This material domain is basically "air" blocks, material above original topography.

casing Material located within casing during core drilling. The material may be lose muck or insitu but due to lack of confidence in material type, it is lumped into the casing domain.

ob This material domain is overburden material, basically glacial till and soil horizon above bedrock.

fill This material domain represents muck or fill material displaced from its insitu location.

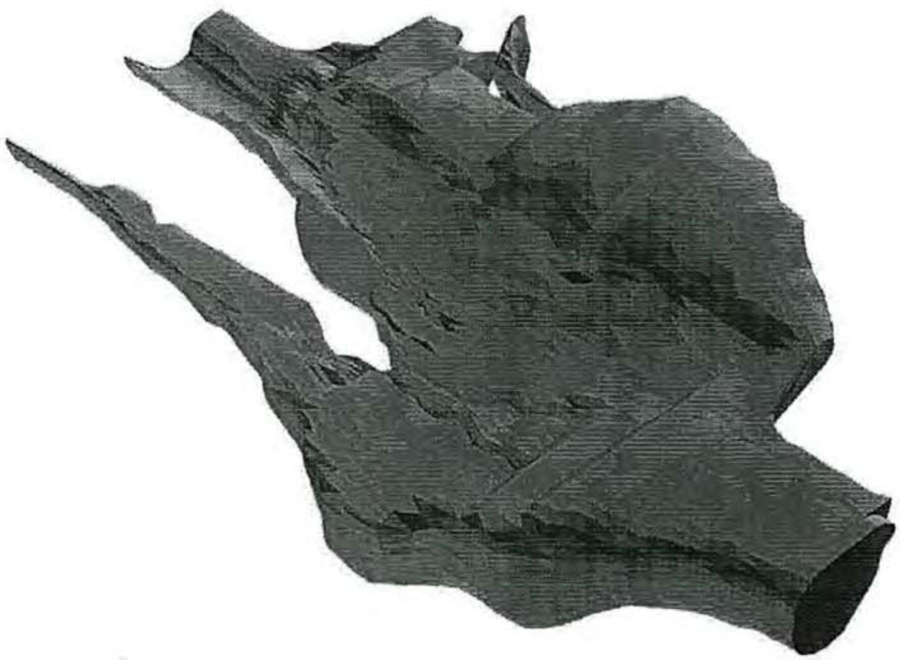


Figure 7: Geologic solid triangulations representing the talc-carbonate orebody.

3.5 Block Modeling

The Vulcan block model update was created in Q3 and Q4 of 2007, incorporating new geologic solids and data gathered from drilling and mapping campaigns since the previous model update in 2002. The block model extents are 1,800 feet E-W (x), 2,600 feet N-S (y), and 800 feet in elevation (z).

The 2007 model was built to original topography prior to any land disturbance. Subsequent models need to also use current pit and dump topography with an additional rock type called "fill" and "overburden" to correctly calculate tonnages within future pit configurations.

The block model was built as two separate block models and then merged together. This was performed to allow a 2' x 2' x 2' sub-block size to gain the proper resolution in the lamprophyre dikes, chlorite, and underground workings but maintain larger block sizes around the perimeter of the main orebody and within the waste solids. The first model included the larger geologic units: schist, talc, and serpentinite. These were built with 10'x 10'x 10' blocks. The second model which included the smaller scale features was built with 2' x 2' x 2' blocks. The second model was then added to the first model. This method decreased the total number of blocks needed to have reasonable resolution of all the geologic contacts.

3.6 Compositing

Fixed length downhole compositing (runlength) was performed before any estimation methods were run. All diamond drill core and infill drilling assay data was composited on 5-foot intervals. Each composite interval is constrained by geologic solids as not to mix two separate lithologies into one composite sample. The 5 foot composite interval was chosen to be consistent with the previous 2002 block model. This allowed easy comparison of the two models.

The composite point data was then compared to the geologic solids to ensure that appropriate ore/waste composites were located in their correct solids. In a few cases which the mid-X, Y, and Z coordinates of the composite was located outside the appropriate geologic solid triangulation, the composite interval was manually edited to reflect the correct geologic solid.

3.7 General Statistics

General statistics were performed on the non-composite diamond drill core and infill air-rotary drilling data that was located within the orebody geologic solids using MS Excel. All assay data was initially filtered so that only a population of data that best represents the talc-carbonate ore was remaining. This resultant data was then used to run general summary statistics and generate histograms for the critical orebody variables. Resultant data is displayed in Table 3.

Table 3: Summary statistics for the Argonaut orebody.

Summary Statistics	Insol	Minolta Y	YI	Talc (%)	Magnesite (%)	Serpentinite (%)	Chlorite (%)	Arsenic (ppm)	Total Iron (%)
Mean	62.90	68.52	6.02	53.78	34.59	1.94	4.01	63.93	4.29
Standard Error	0.24	0.21	0.17	0.28	0.33	0.23	0.16	4.36	0.03
Median	60.60	70.37	3.36	53.20	38.30	0.00	2.50	5.00	4.58
Mode	54.50	73.39	3.10	52.10	0.00	0.00	2.10	5.00	3.00
Standard Deviation	9.74	8.56	7.07	9.41	11.13	7.69	5.27	166.24	0.99
Sample Variance	94.91	73.23	50.04	88.52	123.77	59.08	27.72	27636.88	0.98
Kurtosis	1.78	2.30	7.10	6.68	1.52	37.92	34.06	25.10	0.18
Skewness	1.17	-1.35	2.54	-0.48	-1.39	5.74	5.07	4.47	-0.35
Range	68.65	56.76	54.32	97.32	65.41	80.50	57.28	1680.35	7.03

Minimum	31.24	28.67	-3.62	1	0	0	0.22	-0.35	1.27
Maximum	99.89	85.63	50.7	98.32	65.41	80.5	57.5	1680	8.3
Count	1699	1700	1700	1147	1147	1146	1147	1454	1022
Confidence Level (95.0%)	0.4636	0.4071	0.3365	0.5451	0.6445	0.4455	0.3050	8.5521	0.0607
Coefficient of Variance	0.15	0.12	1.17	0.17	0.32	3.96	1.31	2.60	0.23

Bi-variant statistics were performed to determine whether a correlation exists between any of the major variables. The majority of theses analyses proved inconclusive with the exception of certain variables. Increases in Minolta Y (i.e. brightness) were found to be directly proportion to an increase in the magnesite content of the ore. Inversely, an indirect relationship was found between Minolta Y and percent of total iron content. Bi-variant graphs are located in Appendix C.

3.8 Variography and Estimation

Variography was carried out on composited values obtained from the drilling database. The composited database is exported as a comma separated value file (.csv). Once exported, the file is edited to remove all data except the drill hole ID, mid- point Cartesian coordinates of each sample, the GEOMOD domain, and the pertinent assay variables.

The edited data was imported in SAGE2001 for analyses. For each assay variable, a down hole variogram was first constructed to calculate the nugget effect for that particular variable. Once the nugget was determined and fixed, a model variograms was generated for each variable.

Variograms were generated for each of the variables to determine a preferred data orientation but were inconclusive. In other words, the variograms showed equal continuity at a range of 100 to 150 feet in both the N-S and E-W orientation. This continuity deviated between 0 and -45 degrees in bearing and up to 30 degrees in dip depending on the variable.

The resulting flat-disc ellipse can be seen by inspecting the individual variograms but was not evident from the automatically derived models using Sage2001 which showed narrow and tall ellipses in the E-W direction. These ellipse models from Sage2001 may be attributed to the spatial relationship of the drill data which is near surface climbing a hill to the East and typically drilled with a preferred E – W orientation.

When displaying the data in 3-D, there is no preferred orientation or location of either high grade or low grade data. Grade spatial variation appears to be random East to West and North to South within the orebody geologic solids. This suggests strong local variability which is not currently being depicted with the 2007 block model. Closer spaced data such as the blasthole data may be needed to properly identify the local variation.

Three grade estimation techniques (nearest neighbor, inverse distance cubed, and ordinary kriging) were used for the most critical ore variables: minolta_y, yi, talc, serpentine, and arsenic. All other variables were calculated solely using the inverse distance cubed method. Because the variography was inconclusive, a consistent search ellipsoid was used with Bearing = 75, Plunge = -5, Dip = 0. This orientation was chosen to be consistent with all variables and best represents the overall trend of the orebody.

The inverse distance cubed proved to be similar to the ordinary kriging due to the lack of a quality directional variogram per ore control variable. Ultimately, inverse distance cubed was adopted as the preferred method of estimation until additional data and geostatistical analyses can be performed.

Due to the relatively tight spatial relationship of arsenic, limitations where imposed on the estimation. Using a maximum value of 2,000 ppm along with a "high value" threshold of 100 ppm, the data was limited to a radius of influence equal to 50 feet by 50 feet by 50 feet.

3.9 Resource Classification

In 2008, the mineral resources and ore reserves are only estimates and do not meet JORC, SEC or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

As per Rio Tinto standards, mineral resources are classified as "an estimate based on reasonable engineering and economic assumptions including:

A) Potential mining methods and their impact on dilution and recovery.
B) Processing routes and saleable products.
C) Likely scale of operation.
D) Operating costs and cut-off selection.
E) Price outlook in accordance with Rio Tinto Requirements."

In order to calculate estimated measured, indicated, and inferred mineral resources, the number of samples used in the ordinary kriging estimate of "Minolta_y" and the distance to the nearest neighbor "Minolta_y" sample were stored and used to calculate each classification. Measured blocks had a minimum of two samples with the nearest neighbor samples from 0 to 50 feet. Indicated blocks also had a minimum of two samples but with a distance from 50 to 100 feet. Inferred resources are greater than 100 feet with a minimum of two samples. The estimation was run in two passes. The first used a search ellipse of 150' x 150' x 90' (x, y, z) with the classification script then run after this estimation. The second estimation was run with a larger search ellipsoid of 500' x 500' x 300' (x, y, z) for all previously un-estimated blocks. Each of these final blocks identified are Inferred resources due to their distance away from nearby samples.

The classification distances were kept consistent with the 2002 block model. These distances are largely based on qualitative data and geological intuition.

3.10 Reconciliation

Reconciliation was performed during 2008 at greater detail and accuracy than had been performed in the past. Total reconciliation factor (R_3) in 2008 was determined to be 0.92. Several reconciliation factors were established being:

R_{1a} = Blast hole modeled tons/Block model tons
Blast hole modeled tons = tons predicted from blast hole samples
Block model tons = tons predicted from Argonaut Block Model

R_{1b} = Received at shed /Blast hole modeled tons
Received at Shed = reported truck counts to bays for period
Blast hole modeled tons = tons predicted from blast hole samples

R_{2a} = Destination in plant / Delivered from shed
Destination in plant = reported plant feed each mill type
Delivered from shed = loaded from each ore type (bays) to crusher to feed plant

R_{2b} = Produced from plant/Destination in plant
Produced from plant = actual sales to customers (not mill production)
Destination in plant = reported plant feed each mill type

R_3 = $\mathbf{R_{1a} \times R_{1b} \times R_{2a} \times R_{2b}}$

Since blasts are not always mined out within the same month or even the same quarter as they are shot, reconciliation at the mine is determined by breaking the tonnages down by blast number and then using the year to date tonnages to calculate the quarterly reconciliation factors **R_{1a}** and **R_{1b}**. This gives a simpler and clearer representation of what is happening with the ore in the mine, than trying to attribute modeled tonnages to a specific month. The **R_2** factors for the mill are broken down and computed on a monthly basis.
Reconciliation reports are a convenient and efficient way to look at how the ore is being utilized and to assess the accuracy of our block model and blast hole model.

In 2008, the **R_{1a}** factor for total ore is near 1, meaning that the block model is doing a good job of distinguishing between waste rock and ore. It does not do as good of a job at distinguishing between the various ore types.

The **R_{1b}** factor is an indicator of the mine's recovery. For 2008, the mine was able to recovery 89% of total ore modeled from blast holes. This factor does not account for unmined ore left in the pit at the end of 2008. If unmined ore is accounted for, the **R_{1b}** factor increases to 91%.

R_2 factors are indicators of how the mill is utilizing the different ore grades. **R_{2a}** factors should be 1 for total ore and 1 for each ore type. **R_{2a}** factors >1 indicate the upgrading or downgrading of ore caused by blending ore grades at the crusher. It is preferable to have

an R_{2a} factor >1 for High Bright and Mine Run, and a R_{2a} factor <1 for Alpha, therefore upgrading low grade ore to produce higher grade products. The R_{2b} factor tells the mill how they are recovering ore as it is milled. This factor can be affected by differing mill processes and is used to evaluate and improve the milling systems.

R_3 is simply the combination of all reconciliation factors and represents the total recovery of ore throughout the planning (modeling), mining, and milling process.

Table 4: Ore reconciliation for the Argonaut Mine.

Reconciliation Factor - R_{1a}												
	Block Model (tons)				Blast Hole Modeled (tons)				R_{1a}			
Blasts	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore
1600NP05		3,029	4,269	7,298		10,913	0	10,913		3.60	0.00	1.50
1600NP06	4734.7	1,615		6,350	2,493	4,426		6,919	0.53	2.74		1.09
1520NP03		1107.6	5,827	6,934		3,034	3,982	7,016		2.74	0.68	1.01
1500SD05	2208	2,184		4,392	5,867	2,293	0	8,160	2.66	1.05		1.86
1480SD01	1472.4	3,513		4,985		3,390	0	3,390	0.00	0.97		0.68
1600NP03		10,295		10,295	412	9,992		10,404		0.97		1.01
1600NP07	2,746	6,110		8,856	1,982	9,335	1,268	12,585	0.72	1.53		1.42
1520NP04	186.1	12,861	4,700	17,747		7,204	8,277	15,481	0.00	0.56	1.76	0.87
1480SD02	9,888	341.8		10,229	2,355	4,859		7,214	0.24	14.22		0.71
1500SD06	4,612			4,612	952			952	0.21			0.21
1480SD05	6,420	1275.5		7,696	7643			7643	1.19	0.00		0.99
Total 2008	32,267	42,331	14,795	89,393	21,704	55,446	13,527	90,677	0.67	1.31	0.91	1.01

Reconciliation Factor - R_{1b}												
	Blast Hole Modeled (tons)				Truck Counts (tons mined)				R_{1b}			
Blasts	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore
1600NP05		10,913		10,913		8766	832	9598		0.80		0.88
1600NP06	2,493	4,426		6,919	3332	2122		5454	1.34	0.48		0.79
1520NP03		3,034	3,982	7,016	636	3810	3564	8010		1.26	0.90	1.14
1500SD05	5,867	2,293		8,160	6758	1086		7844	1.15	0.47		0.96
1480SD01		3,390		3,390	960	1820		2780		0.54		0.82
1600NP03	412	9,992		10,404		10190		10190	0.00	1.02		0.98
1600NP07	1,982	9,335	1,268	12,585	2364	9374	704	12442	1.19	1.00	0.56	0.99
1520NP04		7,204	8,277	15,481		9538	4650	14188		1.32	0.56	0.92
1480SD02	2,355	4,859		7,214	1236	3016	0	4252	0.52	0.62		0.59
1500SD06	952			952	448			448	0.47			0.47
1480SD05	7643			7643	5350			5350	0.70			0.70
Total 2008	21,704	55,446	13,527	90,677	21,084	49,722	9,750	80,556	0.97	0.90	0.72	0.89

Reconciliation Factor – R_{2a}												
	Delivered to crusher				Destination in plant				R_{2a}			
Month	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore
Jan	1336	3379	1758	6473	1,733	5,019	215	6,967	1.30	1.49	0.12	1.08
Feb	2501	3695.5	1788.5	7985	2322	5181	819	8,322	0.93	1.40	0.46	1.04
Mar	2051	5719	369	8139	2,273	5,105	508	7,886	1.11	0.89	1.38	0.97
Apr	2,726	6,166	803	9695	2,434	6,301	960	9,695	0.89	1.02	1.20	1.00

May	2,173	5,012	2,360	9545	2,619	4,967	1,343	8,929	1.21	0.99	0.57	0.94
Jun	1,532	6,674	1,527.5	9733.17	3,144	5,529	608	9,281	2.05	0.83	0.40	0.95
July	3,580	5,740	735.0	10055	3,449	5,870	736	10,055	0.96	1.02	1.00	1.00
August	4,552	4,973	488.0	10013.5	3,716	5,588	710	10,014	0.82	1.12	1.45	1.00
September	4,643	5,095	480	10218	4,805	4,865	548	10,218	1.03	0.95	1.14	1.00
October	2,820	3,945	314	7078	2,901	3,783	394	7,078	1.03	0.96	1.25	1.00
November	1,030	2,511	319	3859	760	2,780	319	3,859	0.74	1.11	1.00	1.00
December	1,201	4,590	399	6189	1,221	4,570	399	6,190	1.02	1.00	1.00	1.00
Total 2008	**30,143**	**57,499**	**11,341**	**98,983**	**31,377**	**59,558**	**7,559**	**98,494**	**1.04**	**1.04**	**0.67**	**1.00**

Reconciliation Factor – R_{2b}												
Month	Destination in plant				Produced from plant				R_{2b}			
	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore	Alpha	MR	HB	Ore
Jan	1733	5019	215	6967	1352	5535	156	7043	0.78	1.10	0.73	1.01
Feb	2322	5181	819	8322	2694	6352.5	352	9398.5	1.16	1.23	0.43	1.13
Mar	2273	5105	508	7886	2471	5261	188	7920	1.09	1.03	0.37	1.00
Apr	2,434	6,301	960	9,695	2,459	6,187	724	9,370	1.01	0.98	0.75	0.97
May	2,619	4,967	1343	8,929	3,195	6,470	482	10,147	1.22	1.30	0.36	1.14
Jun	3,144	5,529	608	9,281	3,302	5,598	313	9,213	1.05	1.01	0.51	0.99
July	3,449	5,870	736	10,055	3,442	6,146	393	9,981	1.00	1.05	0.53	0.99
August	3,716	5,588	710	10,014	3,691	5,194	375	9,260	0.99	0.93	0.53	0.92
September	4,805	4865	548	10,218	4,283	5,650	243	10,176	0.89	1.16	0.44	1.00
October	2,901	3,783	394	7,078	3,373	4,088	255	7,716	1.16	1.08	0.65	1.09
November	760	2,780	319	3,859	1,682	2,749	138	4,569	2.21	0.99	0.43	1.18
December	1,221	4570	399	6,190	1,324	4,646	257	6,227	1.08	1.02	0.64	1.01
Total 2008	**31,377**	**59,558**	**7,559**	**98,494**	**33,268**	**63,876**	**3,876**	**101,020**	**1.06**	**1.07**	**0.51**	**1.03**

Total 2008 Reconciliation Factor – R3					
Ore Type	**R1a**	**R1b**	**R2a**	**R2b**	**R3**
Alpha	0.67	0.97	1.04	1.06	0.72
Mine Run	1.31	0.90	1.04	1.07	1.30
High Bright	0.91	0.72	0.67	0.51	0.23
Ore Recovery	1.01	0.89	1.00	1.03	0.92

3.11 Suggestions for Model Improvement

During construction and verification of the 2007 Argonaut block model several items were noted for improvement in subsequent versions:

1) The geologic solids should be extended to depth. The 2007 geologic solids were arbitrarily cut-off at a depth slightly below the deepest drill holes within 100 feet.
2) Additional surface mapping performed in 2008 needs to used to adjust the current geologic solids. This would greatly improve the location and influence of the lamprophyre dikes as well as sure-up some of the talc to serpentinite contact zones..

3) Samples from historic infill drilling campaigns are currently being re-ground using consistent grind standards, thus resulting in more accurate and reproducible Minolta color values.
4) Work should continue on characterization of the lamprophyre dikes. If a unique geochemical signature can be obtained for each dike, they can then be better correlated between surface and subsurface data.
5) With the addition of data, variography should be run again to determine whether a preferred orientation exists for each variable. If preferred orientations can be determined, those variograms should be used to re-assess ordinary kriging estimation.

Section 4.0 Conversion of Estimated Resources to Reserves*

4.1 Economic Assumptions

During the construction of the life of mine plan, no economic assumptions, sales prices, capital costs, sustaining capital, geotechnical parameters, dilution, or recovery were incorporated into the design. Only location of talc-carbonate material and minimal stripping was taken into account when creating the various phases of mining.

The estimated mineral resources and ore reserves listed in this report do not meet JORC and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

4.1.1 Closure Costs

A full update of closure costs related to RTM's Vermont operations was last completed in December 2003 and for active properties in February 2006. Costs are tracked and updated monthly. All costs were derived using a 9.01% discount rate and 2.161% inflation rate resulting in a net rate of 6.849%.

Estimated closure costs for all properties within the current Vermont Operations land boundaries total $7,044,565. Both the inactive mines of Frostbite and Clifton were included in this table as they are along the same Ludlow talc-carbonate trend and within a short distance to the Argonaut Mine. Further detail on each property is located in Table 5.

Table 5: Estimated Closure costs for Vermont Operations

Properties for Vermont Ops.	Last updated	Property status	Closure Estimate	Post-closure Estimate	Total Closure & Post-closure
Black Bear Mine	Dec-03	Closure	$275,000.00	$100,000.00	$ 375,000.00
Frostbite Mine	Dec-03	Inactive	$75,000.00	$50,000.00	$ 125,000.00
Rainbow Mine	Dec-03	Inactive	$275,000.00	$100,000.00	$ 375,000.00
Clifton Mine	Dec-03	Inactive	$275,000.00	$100,000.00	$ 375,000.00
Argonaut Mine	Feb-06	Operating	$2,080,774.00	$979,161.00	$3,059,935.00
Ludlow Mill	Feb-06	Operating	$2,246,130.00	$488,500.00	$2,734,630.00
				total	$7,044,565.00

4.2 Cut-Off Grade

Ore grades were determined for the Argonaut Mine by a combination of current product specifications, average values of talc-carbonate ore, and discussions with mine personnel regarding ability to blend various ore qualities to achieve wanted grades.

Table 6 summarizes the targeted ore grade parameters for the Argonaut Mine along with the destination products and locations where ore types are stored. These published ore specifications do not indicate a cutoff for percent serpentinite. Serpentinite percentage is controlled in the pit using a cutoff of 15% maximum value. Ore containing greater than 5% is typically blended with ore containing no serpentinite to maintain current product specification for low serpentinite percentage.

Table 6: Crude ore specifications and destination products per ore type.

CRUDE ORE	TARGET PARAMETERS				DESTINATION PRODUCT	LOCATION
NAME	MINERAL Talc Min %	COLOR (Y)	YI	As		
Alpha	45	NA	NA	<350	Grade 36, Vertal MB, RG	Ludlow Ore Shed, Rainbow Pad
Mine Run - 5810	45	60	<14	<350	Grade ABC, C85, TC-100, FG, Vertal 97, 92, 7, MB, MB325, EZ Flow VT, EZ Flow MB	Ludlow Ore Shed, Rainbow Pad
Mine Run - 5810 (Blend Material)	45	60	<14	<400	Blend with other crude ores	Ludlow Ore Shed, North Ore pad Rainbow Pad
High Bright	45	72	<14	<350	Vertal 77, 503, 782, Grade TC-97F, KT1	Ludlow Ore Shed, Rainbow Pad & In-pit Stockpile

4.3 Geotechnical Parameters

Historically, there have been little data collection and information gathered for geotechnical considerations in slope design at the Argonaut Mine. In October 2006, an evaluation of the current slope angles was performed with recommendations made for slope design criteria. The study was based solely on an evaluation of the pit topographic map (current as of September 2006), which shows bench face angles and overall slope angles that have resulted from current and historic blasting and excavation practices. No data on geology, hydrology, faulting, or rock material properties were used to derive the recommended design criteria.

The recommendations produced are based solely on empirical criteria and have not been verified by a more in-depth slope stability analysis incorporating lithologic units, geologic contacts, wall orientations, structural orientations, rock mass strength estimates, and hydrology. Opportunities to increase overall slope angles likely exist, as these design criteria likely represent a lower bound to achievable wall angles, but optimization will depend on improving blasting and excavation practices and performing additional slope stability studies.

The recommended design criteria are for either 20-foot or 40-foot bench heights. These recommendations should not be considered as definitive design criteria until additional

slope stability analyses are completed. It should also be emphasized that the 20-foot bench design criteria will require best management practices in blasting and excavation in order to achieve the necessary distribution of bench face angles.

Bench Height – 40 feet	Bench Height – 20 feet
Bench Width – 23 feet	Bench Width – 19 feet
Bench Face Angle – 58°	Bench Face Angle – 64°
Interramp Slope – 40.0°	Interramp Slope – 35.0°

4.3.1 Slope Angle Evaluation

The slope angle evaluation consists of two components - a review of the overall slope angles for the southern half of the east wall (for use as a proxy for interramp slope angle) and a review of the distribution of bench face angles for the northern and southern portions of the east wall. Results of these components were combined with calculated bench widths for 20- and 40-foot benches and bench heights of 20 feet and 40 feet. The four variables were adjusted using the following equation until a reasonable balance was achieved between semi-qualitative inputs (interramp slope angle and bench face angle) and more quantitative inputs (bench width and bench height). The equation relating these four variables is:

$$I = \tan^{-1}(H / (W + (H / \tan B)))$$

Where;

W = bench width	I = interramp slope angle
H = bench height	B = bench face angle

The overall slope angle component was performed to evaluate the range of stable versus unstable slope angles and heights. As the method does not take into account geology, structure, hydrology, blasting and excavation practices or other localized inputs to stability, it is somewhat conservative. However, as it is based on what is currently achieved, it is a useful method for approximating potential limits to slope stability. The overall slope angle resulting from the evaluation was used as a proxy for the interramp slope angle, which is generally several degrees steeper.

4.4 Metallurgical Models

Currently, there is not a metallurgical model for the Argonaut Mine and Ludlow Mill. Crude ore is broken down into three main ore types with all material outside these specifications deemed as waste. High bright, Mine run, and Alpha ore specifications are located in Table 6. The only difference between ore types is the minimum Minolta Y (brightness) value.

Table 7: Argonaut Mine crude ore specifications

	Argonaut Mine: Crude ore specifications			
	Talc % (min.)	Minolta Y (min.)	As ppm (max.)	Serpentinite % (max.)
High Bright	45	72	350	15
Mine run		60		
Alpha		n/a		

Other rock types or material onsite that are deemed waste include schist, lamprophyres, chlorite, and talc with greater than 15% serpentinite and/or talc with greater than 350 ppm concentration of arsenic.

During mining activities, the serpentinite percentage is closely monitored. As serpentine percentage rises above the current cutoff of 15%, this results in a much harder product thus negating the soft properties of the talc-carbonate ore.

Recovery during the dry processing has been estimated at 75% for both Mine run and Alpha ores. For High bright ore, 54% of the material is used for High bright product with the remaining 46% of material going to either Mine run or Alpha ore.

4.5 Dilution, Mining Loss

The Argonaut Mine currently uses a 92% recovery of all mined ore from the block model to final marketable product. This factor was originally held at 75% to account for a portion of ore that would be either lamprophyre dikes or chlorite and material lost during regular milling and mining practices. Extensive efforts were put forth in 2008 to better control and understand reconciliations and recovery, therefore a final end of year reconciliation factor is 0.92.

4.6 Mine Design

A life of mine design was updated for the Argonaut Mine in June 2008. The talc ore body was used as the guide during the design process. During life of mine design, an ultimate pit was not used in the design process as the most current ultimate pit shells were out of date and utilized inaccurate costs. The following points were taken into consideration when completing the life of mine design:

- Three different ore types need to be supplied (High bright, Mine run, and Alpha).
- High bright ore (HB) needs to be saved for high bright products only and not blended for lower-brightness products.
- Stripping should be minimized when possible.

Haulage and mine access was also considered during design. The main access from the mine to the ore shed and Blackbear dump is the western access road. This access road is kept in place for the entire life of mine (see Appendix G).

The majority of the phases for the life of mine design for Argonaut are the same as the 2007 design. The only difference is the inclusion of a new pit called the Ranger pit. This pit is in the southern end of the mine and was included to help with a high bright shortfall in the schedule.

The main access from the mine to the ore shed and Black Bear dump is the western access road. This road is kept in place for the entire life of mine. Some phases contain ramps, e.g. later north pit phases have a ramp to the north. For the phases without ramps, it has been assumed that access to benches can be gained from the surrounding topography.

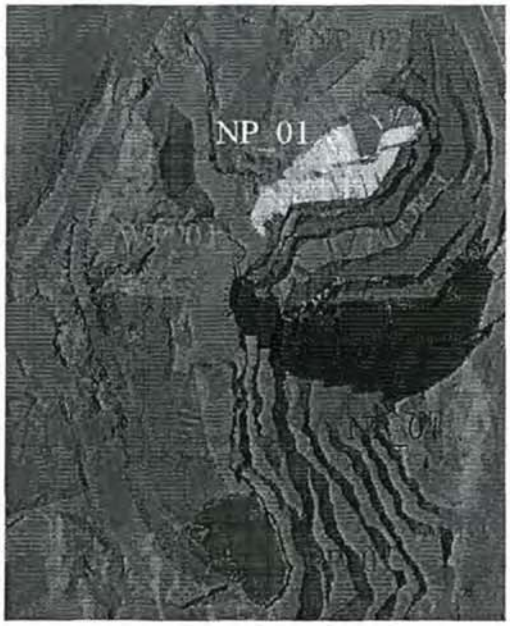
The mine plan includes three main pits: North Pit (NP), South Development Pit (SD) and the South Pit (SP). The Ranger Pit (RP) pit has also been included and is at the bottom of the pit in the southern end. It primarily supplies high bright and mine run. This area was too small previously for a pit, but due to waste removal in the SD pit, this area can now be mined. The SD pit is to the west of the main workings. This pit was designed to supply alpha and mine run ore requirements, and therefore save the high bright in the NP phases.

The SD pit was outside the previous ultimate pit and considered uneconomic due to lower color and brightness and potentially high arsenic. However, the pit can at least provide alpha ore, which has no color or brightness specification and potentially mine run and high bright as the pit goes deeper. It is also in an area that requires little stripping.

4.6.1 Mine Plan Highlights

- The strip ratio in 2008 and 2009 is 0.8:1 and 0.5:1 respectively. The highest strip ratio in the LOM is 3:1. This is lower than the 2007 plan due to improvements in the model and recovery.
- Strip ratio is 1.3:1 for the first seven years, 2.1:1 for the next seven years, 3:1 for the following five years then returns to less than 1:1.
- The drop in sales of mine run material means we need to mine less and we don't get to the high bright as quickly. Therefore, there is limited high bright for first five years. The increase in high bright sales has made this very tight and there is currently a shortage in years 2009 and 2011.
- During the first five years of the schedule, to gain an extra ton of high bright requires movement of 20,000 of material (ore and waste).
- In 2020, the alpha ore is depleted and most ore is high bright and mine run.
- Mine life has increased to 32 years

The following figures illustrate a plan view of the designed phases:



WP_01	HB phase
RP_01	HB phase
NP_01	HB and Mine run phase
NP_02	Mine run and HB
SD_01	Alpha and Mine run
NP_04	Waste/Ore Phase

Figure 8: Mining phases from 2008 to 2014.

NP_03 **NP_05** **NP_07** **NP_08** **SP_02**	Ore phases
NP_06 **SP_01**	Waste/Ore phases

Figure 9: Remaining life of mine planned phases.

In order to reserve the mine design into the different ore types, a variable called "ore" was added to the block model. Block model scripts were then used to flag this variable according to the ore type specifications.

Table 8: Ore flagging parameters.

Ore Type	**Ore Flag**	**Talc**	**As**	**Serp**	**Min Y**
Waste	0	-	-	-	-
Alpha	1	≥ 45	≥ 350	≤ 15	-
Mine run	2	≥ 45	≥ 350	≤ 15	≥ 60
High bright	3	≥ 45	≥ 350	≤ 15	≥ 72

This "ore" variable was then used during the reserving process for all phases. Note that in the 2007 mine plan, the SD pit was reserved using more relaxed specifications. This was due to the fact that there was little drilling in the SD pit. Therefore, in the 2008 mine plan, SD pit uses the same specifications as the other phases.

Reserves were then run using these variables in order to break the reserves down into the different ore types.

Table 9: Ore type tons by phase.

Phase	HIGH BRIGHT TONS	ALPHA TONS	MINERUN TONS	WASTE TONS	TOTAL TONS
NP_01	28,816	13,830	96,237	22,586	161,469
NP_02	205,448	22,787	452,753	494,682	1,175,670
NP_03	141,082	3,577	85,138	20,849	250,647
NP_04	168,020	30,344	373,265	1,526,900	2,098,529
NP_05	377,158	0	370,460	171,800	919,418
NP_06	6,131	3,234	77,564	2,547,148	2,634,077
NP_07	66,840	18,724	412,054	483,098	980,716
NP_08	218,788	24,091	406,359	385,467	1,034,705
RP_01	59,900	0	81,167	39,140	180,207
SD_01	11,033	301,931	212,717	276,004	801,685
SP_01	450,244	1,843	735,147	1,298,209	2,485,444
SP_02	112,452	2,087	188,576	107,332	410,447
WP_01	13,210	0	9,485	675	23,369
TOTAL	1,859,124	422,449	3,500,922	7,373,889	13,156,384

Table 10: Ore type tons by phase and bench.

Phase	Bench	HIGHBRIGHT TONS	ALPHA TONS	MINERUN TONS	WASTE TONS	TOTAL TONS
NP_01	1540	1,034	17	7,520	4,244	12,815
	1520	11,339	5,961	35,991	9,316	62,607
	1500	16,443	7,852	52,726	9,027	86,047
Phase Total		28,816	13,830	96,237	22,586	161,469
NP_02	1660	0	410	516	4,097	5,023
	1640	0	5,788	3,292	12,110	21,190
	1620	12	7,666	4,033	17,318	29,029
	1600	4,183	3,548	26,217	61,002	94,950
	1580	7,405	2,979	69,811	152,462	232,656
	1560	17,759	1,979	73,577	109,008	202,323
	1540	36,777	416	93,904	86,420	217,518
	1520	53,840	0	95,145	32,979	181,964
	1500	85,473	0	86,258	19,286	191,017
Phase Total		205,448	22,787	452,753	494,682	1,175,670
NP_03	1480	77,064	3,577	58,077	15,739	154,458
	1460	64,018	0	27,061	5,110	96,189
Phase Total		141,082	3,577	85,138	20,849	250,647
NP_04	1780	0	0	0	5,173	5,173
	1760	0	0	0	27,674	27,674
	1740	0	0	0	49,342	49,342
	1720	0	0	0	53,314	53,314
	1700	0	0	0	90,523	90,523
	1680	0	0	0	132,785	132,785
	1660	0	108	5	148,559	148,672
	1640	0	5,269	272	169,192	174,733
	1620	89	6,788	3,294	178,121	188,293
	1600	360	4,654	24,654	162,078	191,747
	1580	523	306	42,589	152,903	196,321
	1560	15,971	1,675	70,329	114,966	202,942
	1540	40,378	1,793	54,466	111,342	207,980
	1520	62,676	4,343	69,371	75,900	212,290
	1500	48,024	5,407	108,284	55,027	216,741
Phase Total		168,020	30,344	373,265	1,526,900	2,098,529
NP_05	1480	49,322	0	141,318	64,382	255,022
	1460	91,548	0	116,310	49,400	257,258
	1440	128,141	0	70,428	30,483	229,052
	1420	108,147	0	42,404	27,535	178,086
Phase Total		377,158	0	370,460	171,800	919,418
NP_06	1800	0	0	0	8,407	8,407
	1780	0	0	0	43,876	43,876
	1760	0	0	0	70,358	70,358
	1740	0	0	0	113,596	113,596
	1720	0	0	0	121,696	121,696
	1700	0	0	0	136,798	136,798
	1680	0	0	0	154,322	154,322

Phase	Bench	HIGHBRIGHT TONS	ALPHA TONS	MINERUN TONS	WASTE TONS	TOTAL TONS
	1660	0	0	0	167,598	167,598
	1640	0	0	0	184,903	184,903
	1620	0	0	0	195,893	195,893
	1600	0	1,227	0	212,137	213,364
	1580	0	962	0	221,317	222,279
	1560	0	0	740	223,753	224,493
	1540	0	0	6,253	242,754	249,007
	1520	711	127	24,258	234,041	259,137
	1500	5,420	918	46,313	215,700	268,352
Phase Total		6,131	3,234	77,564	2,547,148	2,634,077
NP_07	1480	13,707	7,171	78,420	199,455	298,753
	1460	20,829	8,555	151,720	166,778	347,881
	1440	32,305	2,998	181,914	116,865	334,082
Phase Total		66,840	18,724	412,054	483,098	980,716
NP_08	1420	40,581	19,964	199,941	137,400	397,886
	1400	93,065	3,925	136,981	139,316	373,287
	1380	85,143	202	69,438	108,750	263,532
Phase Total		218,788	24,091	406,359	385,467	1,034,705
RP_01	1500	1,244	0	4,549	6,141	11,934
	1480	8,499	0	27,644	15,791	51,934
	1460	32,259	0	40,650	13,652	86,561
	1440	17,899	0	8,324	3,556	29,778
Phase Total		59,900	0	81,167	39,140	180,207
SD_01	1520	0	923	0	8,053	8,976
	1500	0	13,672	11,722	46,833	72,227
	1480	0	104,991	52,373	74,075	231,439
	1460	5,485	119,137	63,550	102,645	290,816
	1440	5,549	63,208	85,071	44,399	198,227
Phase Total		11,033	301,931	212,717	276,004	801,685
SP_01	1760	0	0	0	4,077	4,077
	1740	0	0	0	10,964	10,964
	1720	0	0	0	18,591	18,591
	1700	0	0	0	22,868	22,868
	1680	0	0	0	42,707	42,707
	1660	0	0	0	76,544	76,544
	1640	0	0	0	86,378	86,378
	1620	0	0	1	120,465	120,467
	1600	0	0	4,769	144,141	148,910
	1580	0	0	23,142	172,663	195,805
	1560	7,770	0	39,068	156,302	203,141
	1540	26,767	0	45,886	153,576	226,228
	1520	43,314	0	63,770	87,639	194,722
	1500	53,463	0	94,905	75,874	224,243
	1480	73,275	0	97,893	33,971	205,138
	1460	76,182	0	109,662	25,142	210,986
	1440	87,840	0	116,475	24,089	228,404
	1420	81,633	1,843	139,577	42,218	265,271

Phase	Bench	HIGHBRIGHT TONS	ALPHA TONS	MINERUN TONS	WASTE TONS	TOTAL TONS
Phase Total		450,244	1,843	735,147	1,298,209	2,485,444
SP_02	1420	13	0	2,246	0	2,260
	1400	61,112	966	93,409	39,753	195,239
	1380	51,326	1,121	92,921	67,580	212,949
Phase Total		112,452	2,087	188,576	107,332	410,447
WP_01	1520	13,210	0	9,485	675	23,369
Phase Total		13,210	0	9,485	675	23,369
TOTAL		**1,859,124**	**422,449**	**3,500,922**	**7,373,889**	**13,156,384**

4.7 JORC

Estimated mineral resources and ore reserves were not reported to the JORC in 2008. The numbers quoted in this report do not meet JORC and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

4.8 SEC

Estimated mineral resources and ore reserves were not reported to the SEC in 2008. The numbers quoted in this report do not meet SEC and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

4.9 Equipment Selection

The mine currently uses one 65-ton Caterpillar 773 haul truck, one 40-ton Terex TA-40 articulated haul truck, one Caterpillar 365 excavator, two Caterpillar 980 front-end loaders with 7 cubic yard buckets (one in-pit and one at the ore shed), and one Ingersoll-Rand ECM 660III air rotary drill rig. Ancillary equipment includes a Caterpillar 14G grader, Caterpillar D8 bulldozer, an over road sand and plow truck with 10-ton capacity, an over road fuel truck with 2,700 gallon capacity, and an over-road water truck with 1,500 gallon capacity.

Cycle times for hauling to either the Blackbear dump or the ore shed are not currently available and it is not known whether this data is tracked. The truck tonnage factors used for the Caterpillar 773 are: 54 short tons in schist or serpentinite waste rock, 64 short tons for talc, and 48 short tons for oversize “breaker” rock. The Terex TA-40 holds 40 short tons in schist or serpentinite, 42 short tons in talc, and 38 short tons in oversize “breaker” rock.

4.10 Scheduling

Scheduling of the Argonaut Mine was completed by Denver mine planning group in July 2008. The reserve blocks were scheduled according to the 5 year sales forecast and targeting high bright material. The 5 year sales forecast has a decrease in mine run and

alpha sales and an increase in high bright sales. Given the updated sales forcast, the life of the mine is 32 years. The increase in mine life compared to last year's plan is due to the projected sales decrease.

The mining sequence aims to maintain a lower strip ratio for the life of the mine and maintain a supply of high bright ore. The SD pit is considered independent to the North and South pits. WP and RP are mined out early in the schedule. The sequence then runs sequentially through the NP phases and then the SP phases. An ore phase (lower elevation) is mined at the same time as a waste phase is started at higher elevations to maintain a low strip ratio.

The following assumptions were used in the schedule:

- Based on the first quarter tonnage reconciliation, an improved recovery of 85% was used for all ore types.
- Recovery of high bright in the mill shows that only 50% of crude high bright ore becomes high bright product due to throw outs. The remainder goes back to mine run products. So a 50% recovery is factored for high bright.
- 5 Year sales forecast numbers (by product)

The correct mining sequence helps to maintain a lower strip ratio for the life of the mine. SD pit is considered independent to the North and South pits. WP is mined out early in the schedule. The sequence then runs sequentially through the NP phases and then the SP phases. An ore phase (lower elevation) is mined at the same time as a waste phase is started at higher elevations to ensure we maintain a good strip ratio.

The schedule targets the required amount of High-Bright and then brings along whatever Mine-Run and Alpha is mined in the same blocks.

Table 11: Argonaut Mine schedule

Period	1	2	3	4	5	6	7	8
Start Date	1-Jan-08	1-Jan-09	1-Jan-10	1-Jan-11	1-Jan-12	1-Jan-13	1-Jan-14	1-Jan-15
End Date	31-Dec-08	31-Dec-09	31-Dec-10	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15
Target Tons	(Required tons from sales forecast)							
Highbright_target	9,148	17,744	19,403	20,488	21,632	21,632	21,632	21,632
Mill recovery for HB = 50%								
Highbright_mill_target	18,296	35,488	38,806	40,976	43,264	43,264	43,264	43,264
Mining recovery = 85%								
Highbright_recovery_target	21,525	41,751	45,654	48,207	50,899	50,899	50,899	50,899
Alpha_target	34,800	35,076	36,562	39,355	41,965	41,965	41,965	41,965
Minerun_target	56,927	70,458	83,262	89,085	92,057	92,057	92,057	92,057
Minerun_from_highbright	9,148	17,744	19,403	20,488	21,632	21,632	21,632	21,632
Minerun_adj_target	47,779	52,714	63,859	68,597	70,425	70,425	70,425	70,425
Mining recovery = 85%								
Alpha_recovery_target	40,941	41,266	43,014	46,300	49,371	49,371	49,371	49,371
Minerun_recovery_target	56,211	62,016	75,128	80,702	82,853	82,853	82,853	82,853
Total_ore	100,875	123,278	139,227	148,928	155,654	155,654	155,654	155,654
Total_ore_recovery_target	118,676	145,033	163,796	175,209	183,122	183,122	183,122	183,122
Scheduled Tons	(From mine plan schedule to match forecast)							
Highbright_Tons	20,284	38,004	45,254	37,150	49,111	63,882	47,438	54,890
Alpha_Tons	37,559	6,283	10,847	2,127	13,982	4,536	80,978	87,239
Minerun_Tons	60,833	100,746	107,696	135,932	120,029	114,704	54,706	40,993
Ore_Tons	118,676	145,033	163,796	175,209	183,122	183,122	183,122	183,122
Waste Tons	60,669	36,912	194,631	198,411	173,807	251,553	274,721	277,669
Total Tons	179,345	181,945	358,428	373,620	356,929	434,676	457,844	460,792
SR (100% recovery)	0.5	0.3	1.2	1.1	1.0	1.4	1.5	1.5
SR (85% Recovery)	0.8	0.5	1.6	1.5	1.3	1.8	1.9	2.0

Period	9	10	11	12	13	14	15	16
Start Date	1-Jan-16	1-Jan-17	1-Jan-18	1-Jan-19	1-Jan-20	1-Jan-21	1-Jan-22	1-Jan-23
End Date	31-Dec-16	31-Dec-17	31-Dec-18	31-Dec-19	31-Dec-20	31-Dec-21	31-Dec-22	31-Dec-23
Target Tons								
Highbright_target	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Mill recovery for HB = 50%								
Highbright_mill_target	43,264	43,264	43,264	43,264	43,264	43,264	43,264	43,264
Mining recovery = 85%								
Highbright_recovery_target	50,899	50,899	50,899	50,899	50,899	50,899	50,899	50,899
Alpha_target	41,965	41,965	41,965	41,965	41,965	41,965	41,965	41,965
Minerun_target	92,057	92,057	92,057	92,057	92,057	92,057	92,057	92,057
Minerun_from_highbright	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Minerun_adj_target	70,425	70,425	70,425	70,425	70,425	70,425	70,425	70,425
Mining recovery = 85%								
Alpha_recovery_target	49,371	49,371	49,371	49,371	49,371	49,371	49,371	49,371
Minerun_recovery_target	82,853	82,853	82,853	82,853	82,853	82,853	82,853	82,853
Total_ore	155,654	155,654	155,654	155,654	155,654	155,654	155,654	155,654
Total_ore_recovery_target	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Scheduled Tons								
Highbright_Tons	52,428	51,780	45,622	58,360	59,863	49,648	57,590	86,644
Alpha_Tons	36,557	15,936	3,469	39,918	5679	722	19,347	9,481
Minerun_Tons	94,138	115,406	134,031	84,844	117,580	132,752	106,186	86,998
Ore_Tons	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Waste Tons	298,208	310,548	305,144	270,730	295,167	373,299	443,456	430,336
Total Tons	481,330	493,671	488,266	453,853	478,289	556,422	626,578	613,458
SR (100% recovery)	1.6	1.7	1.7	1.5	1.6	2.0	2.4	2.4
SR (85% Recovery)	2.1	2.2	2.1	1.9	2.1	2.6	3.0	2.9

Period	17	18	19	20	21	22	23	24
Start Date	1-Jan-24	1-Jan-25	1-Jan-26	1-Jan-27	1-Jan-28	1-Jan-29	1-Jan-30	1-Jan-31
End Date	31-Dec-24	31-Dec-25	31-Dec-26	31-Dec-27	31-Dec-28	31-Dec-29	31-Dec-30	31-Dec-31
Target Tons								
Highbright_target	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Mill recovery for HB = 50%								
Highbright_mill_target	43,264	43,264	43,264	43,264	43,264	43,264	43,264	43,264
Mining recovery = 85%								
Highbright_recovery_target	50,899	50,899	50,899	50,899	50,899	50,899	50,899	50,899
Alpha_target	41,965	41,965	41,965	41,965	41,965	41,965	41,965	41,965
Minerun_target	92,057	92,057	92,057	92,057	92,057	92,057	92,057	92,057
Minerun_from_highbright	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Minerun_adj_target	70,425	70,425	70,425	70,425	70,425	70,425	70,425	70,425
Mining recovery = 85%								
Alpha_recovery_target	49,371	49,371	49,371	49,371	49,371	49,371	49,371	49,371
Minerun_recovery_target	82,853	82,853	82,853	82,853	82,853	82,853	82,853	82,853
Total_ore	155,654	155,654	155,654	155,654	155,654	155,654	155,654	155,654
Total_ore_recovery_target	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Scheduled Tons								
Highbright_Tons	117,999	75,671	13,391	22,208	30,560	31,248	47,497	64,604
Alpha_Tons	0	3,788	12,842	3,140	11,488	8476	3925	202
Minerun_Tons	65,123	103,663	156,889	157,775	141,075	143,398	131,701	118,317
Ore_Tons	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Waste Tons	444,452	500,102	340,738	321,425	349,392	253,532	218,211	192,704
Total_Tons	627,574	683,224	523,860	504,548	532,514	436,654	401,333	375,827
SR (100% recovery)	2.4	2.7	1.9	1.8	1.9	1.4	1.2	1.1
SR (85% Recovery)	3.0	3.4	2.4	2.2	2.4	1.8	1.6	1.4

Period	25	26	27	28	29	30	31	32
Start Date	1-Jan-32	1-Jan-33	1-Jan-34	1-Jan-35	1-Jan-36	1-Jan-37	1-Jan-38	1-Jan-39
End Date	31-Dec-32	31-Dec-33	31-Dec-34	31-Dec-35	31-Dec-36	31-Dec-37	31-Dec-38	31-Dec-39
Target Tons								
Highbright_target	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Mill recovery for HB = 50%								
Highbright_mill_target	43,264	43,264	43,264	43,264	43,264	43,264	43,264	43,264
Mining recovery = 85%								
Highbright_recovery_target	50,899	50,899	50,899	50,899	50,899	50,899	50,899	50,899
Alpha_target	41,965	41,965	41,965	41,965	41,965	41,965	41,965	41,965
Minerun_target	92,057	92,057	92,057	92,057	92,057	92,057	92,057	92,057
Minerun_from_highbright	21,632	21,632	21,632	21,632	21,632	21,632	21,632	21,632
Minerun_adj_target	70,425	70,425	70,425	70,425	70,425	70,425	70,425	70,425
Mining recovery = 85%								
Alpha_recovery_target	49,371	49,371	49,371	49,371	49,371	49,371	49,371	49,371
Minerun_recovery_target	82,853	82,853	82,853	82,853	82,853	82,853	82,853	82,853
Total_ore	155,654	155,654	155,654	155,654	155,654	155,654	155,654	155,654
Total_ore_recovery_target	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Scheduled Tons								
Highbright_Tons	110,894	58,455	101,324	49,095	82,032	52,711	78,381	86,619
Alpha_Tons	0	0	0	0	0	1656	1163	717
Minerun_Tons	72,228	124,667	81,798	134,028	101,090	128,756	103,589	95,786
Ore_Tons	183,122	183,122	183,122	183,122	183,122	183,122	183,122	183,122
Waste Tons	172,081	117,355	58,933	28,190	24,879	27,061	46,747	58,488
Total_Tons	355,203	300,477	242,056	211,312	208,001	210,183	229,870	241,611
SR (100% recovery)	0.9	0.6	0.3	0.2	0.1	0.2	0.3	0.3
SR (85% Recovery)	1.3	0.9	0.6	0.4	0.3	0.4	0.5	0.6

4.11 Environmental Considerations

All environmental work is performed and supervised onsite by the Environmental Supervisor, Robin Reilly (RTM).

4.11.1 Acid Rock Drainage

The potential for the formation of acid mine drainage from waste dumps is considered very low. Trace sulphide minerals are present onsite, typically less than 1% of the orebody. Sulphide minerals observed during core logging include pyrite and pyrrhotite. The trace amount of sulphide minerals combined with the large percentage of carbonates within the orebody should be sufficient to neutralize any potential acidity.

Current, all waste rock is being tested for geochemical analysis (oxides and elemental analyses) as required by the Rio Tinto Mineral Waste Standard.

4.11.2 Mineral Waste Management

The onsite environmental department maintains the Argonaut Mineral Waste Management program as per Rio Tinto standards. This includes regular testing of waste rock at the Blackbear dump for whole rock and elemental analyses.

Arsenic concentration is a particular issue onsite that is controlled both in the pit with ore specifications and all runoff water is mitigated before leaving site. Local rock types in south-central Vermont tend to have naturally occurring elevated levels of arsenic. Because of this and RTM's customer's sensitivity to arsenic levels product, Argonaut operations closely monitors the arsenic concentration of all material from the mine. This is done by performing Atomic Adsorption testing onsite of all core, infill and blasthole samples.

Material that is above the ore specifications for arsenic levels are deemed waste and moved to the Blackbear waste impoundment. All runoff water from the site, include the Blackbear dump is concentrated to the Rainbow water storage/treatment site. At the Rainbow site, the arsenic is treated before water is discharge offsite.

4.11.3 Land Use Management

All land use zoning is maintained in a GIS database located onsite. Information is coordinated between the onsite Environmental Supervisor and the RTM corporate land department located in Denver, CO, USA.

4.12 Estimated Resources and Reserves

The numbers quoted in this report do not meet JORC, SEC or Rio Tinto standards as Mineral Resources or Ore Reserves; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

This report summarizes estimated mineral resources as simply talc-carbonate material within the modeled orebody that meets current ore specification requirements and lies within the current designed life of mine pit. No economics have been taken into account in this determination.

Estimated ore reserves as detailed within this report are simply estimated mineral resources that lie within the current life of mine plan. No economics, recoveries, dilution, costs, pricing, or geotechnical parameters have been applied, and thus do not meet JORC and/or Rio Tinto requirements as ore reserves.

Section 5.0 Reserve*23 Exploitation

5.1 Planned versus Actual Tonnages

In 2008, mining activities produced 94,194 short tons of ore. An additional 93,119 short tons of waste were moved to either the Blackbear waste impoundment or used as backfill in the Old Main pit. The resultant stripping ratio for 2008 is 1:1.01. Total material mined in 2008 was 187,313 short tons.

According to the 2007 mine schedule, a total of 486,763 short tons of material were to be moved. This included 198,644 short tons of ore and 381,286 short tons of waste resulting in a stripping ratio (at 100% recovery) of 1:1.9 (for details see Table 8). The plan was changed from the original 2007 due to reduced sales during 2008.

* The numbers quoted do not meet JORC and/or Rio Tinto standards as a resource; they constitute preliminary estimates of potential tonnages and grade that require further study to determine their status.

Section 6.0 External Reviews

6.1 Geologic and Block Model Reviews

Name of Review	Purpose	Reviewers	Organization	Date	Summary of major findings
2002 Techbase model review	Validate and review procedures of model creation.	David Crouse1, David Marek1, Mike Norred2, Bruce Robbins3	1 - Rio Tinto Minerals, 2 - Techbase International Ltd., 3 - Exploration JBR Enr.	March-2002	
2008 Vulcan Model review	Validate and review procedures in model update.	Lars Karlsson, Mike Cerino	Rio Tinto Minerals	March-2008	See Appendix F

6.2 Geotechnical Reviews

Name of Review	Purpose	Reviewers	Organization	Date	Summary of major findings
Stability Estimate of Proposed East Highwall	Collect and estimate stability on East Highwall	Mike Cerino	Rio Tinto Minerals	December-2002	Additional data must be collected including facture geometries, hydrology, and rock material properties.
Mine Overburden Storage and Tailings Facilities review.	Review of design data	Peter Ingraham and James Johnson	Golder Associates	August 2004	Biennial review and inspection of facilities, review design and planning.
Argonaut North Pit Slope Design Review and Blackbear Dump Progress Review	Slope design review	Jeff Mattern	Rio Tinto Minerals	January 2005	
Design and Operational Recommendations for the Blackbear Dump and Argonaut Mine.	Mine and dump design recommendations.	Graeme Major and Thomas Wythes	Golder Associates	July 2005	
Empirical Analysis of Slope Stability	Estimate overall pit stabilty angles by empirical methods	Ray Yost	Rio Tinto Minerals	November-2006	Current slope angles are maintained but best management practices need to be implemented.

Section 7.0 References Cited

Bain, George W., 1936, *Serpentinization of Vermont Ultrabasics*: Bulletin of the Geological Society of America, Vol. 47, pp. 1961-1980.

Chidester, A.H., Billings, M.P., and Cady, W.M., 1951, *Talc Investigations in Vermont, Preliminary Report*: U.S. Geol. Survey Circular 95.

Johannes, W. 1969, *An Experimental Investigation of the System* $MgO\text{-}SiO_2\text{-}H_2O\text{-}CO_2$; American Journal of Science, Volume 267, pp. 1083-1104.

Ratcliffe, N.M., 1996, Preliminary bedrock geologic map of the Andover quadrangle, Windsor County, Vermont: U.S. Geol. Survey Open-File Report 96-32.

Ronald, E.C., and Crouse, D.L, 2005, *The Geology of and Product Applications for the Argonaut Talc Mine, Ludlow, Vermont*: Forum on the Geology of Industrial Minerals, Asheville, N.C.

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APPENDIX A

Vermont Operations – Land Boundaries

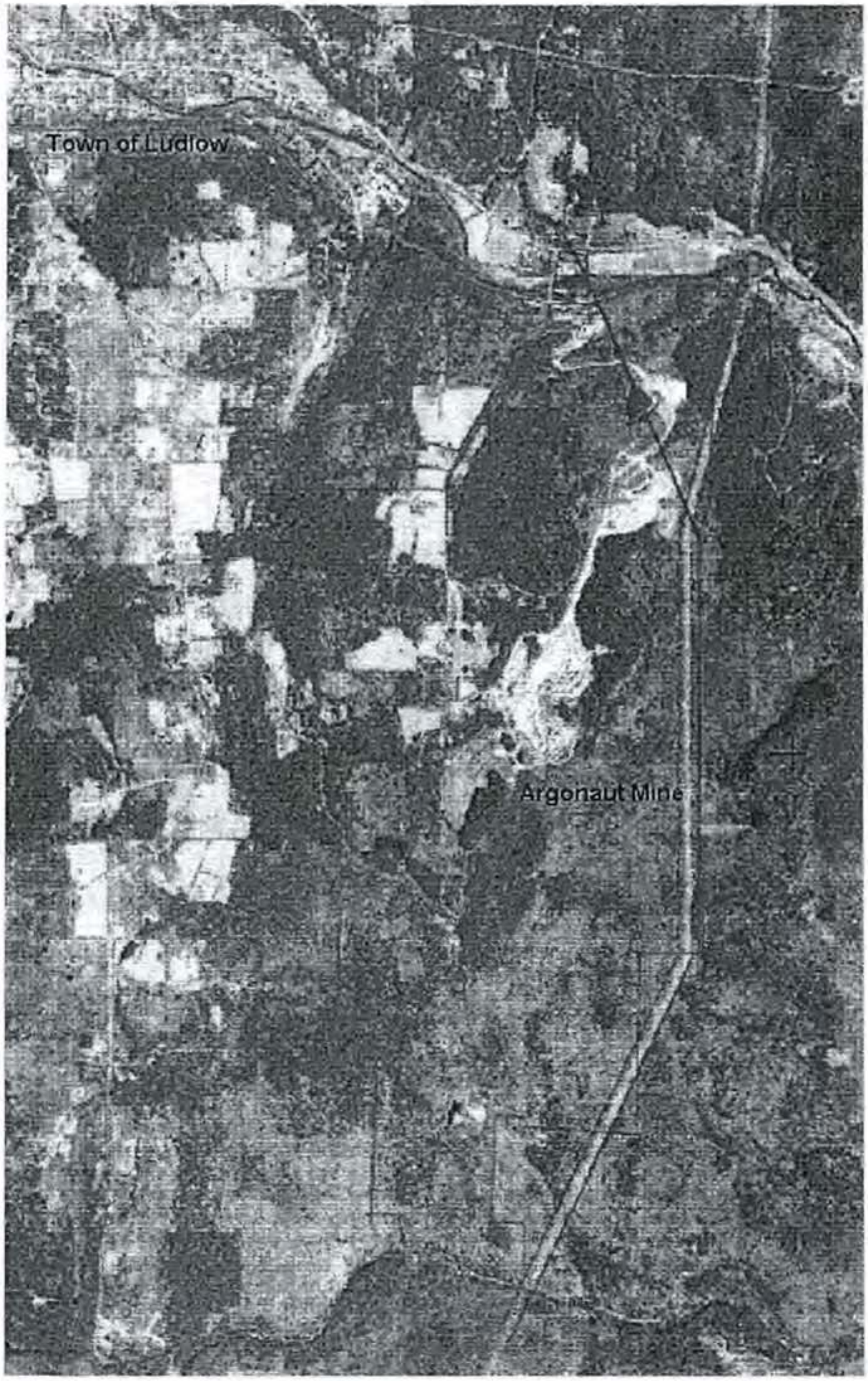


Figure A-1: Land boundary information for the Vermont Operations.

APPENDIX B

Argonaut Mine: Rock Codes

New Codes	
-99	missing data, non-sampled data
-1	excluded data in model (above/below cutoffs)
0	void, air, u/g workings
1	undefined waste
2	muck, in-pit debris on benches
3	casing (unknown rock type)
5	soil, overburden
30	talc-carbonate (general term)
31	talc-carbonate: Pale-green, micaceous talc.
32	talc-carbonate: pale green-gray, magnesite veining and stringers, < 4% magnetite
36	talc-carbonate: talc-carbonate with 1 to 10% serpentinite,
37	talc-carbonate: red-brown talc-carbonate, FeOx staining.
38	talc-carbonate: yellow-brown talc-carbonate, weathered with distinct carbonate texture.
50	Chlorite, either as "cinder" or "blackwall" alteration
60	Serpentinite
70	Quartz vein: massive, clear to milky white quartz.
80	Schist; biotite-muscovite-garnet-schist, can range from gneiss to phyllite
90	Ultramafic Dike (general term); typically referred to as lamprophyre

APPENDIX C

General Orebody Statistics

Table C-2: Insol within the Argonaut Orebody

Summary Statistics - Insol	
Mean	62.90
Standard Error	0.24
Median	60.60
Mode	54.50
Standard Deviation	9.74
Sample Variance	94.91
Kurtosis	1.78
Skewness	1.17
Range	68.65
Minimum	31.24
Maximum	99.89
Count	1699
Confidence Level(95.0%)	0.4636
COV	15.49%

Bin	*Frequency*	*Cumulative %*
40	3	0.18%
45	5	0.47%
50	39	2.77%
55	263	18.25%
60	490	47.09%
65	368	68.75%
70	216	81.46%
75	120	88.52%
80	89	93.76%
85	41	96.17%
90	24	97.59%
95	21	98.82%
100	20	100.00%

Figure C-1: Histogram of Insol Data in the Argonaut Orebody.

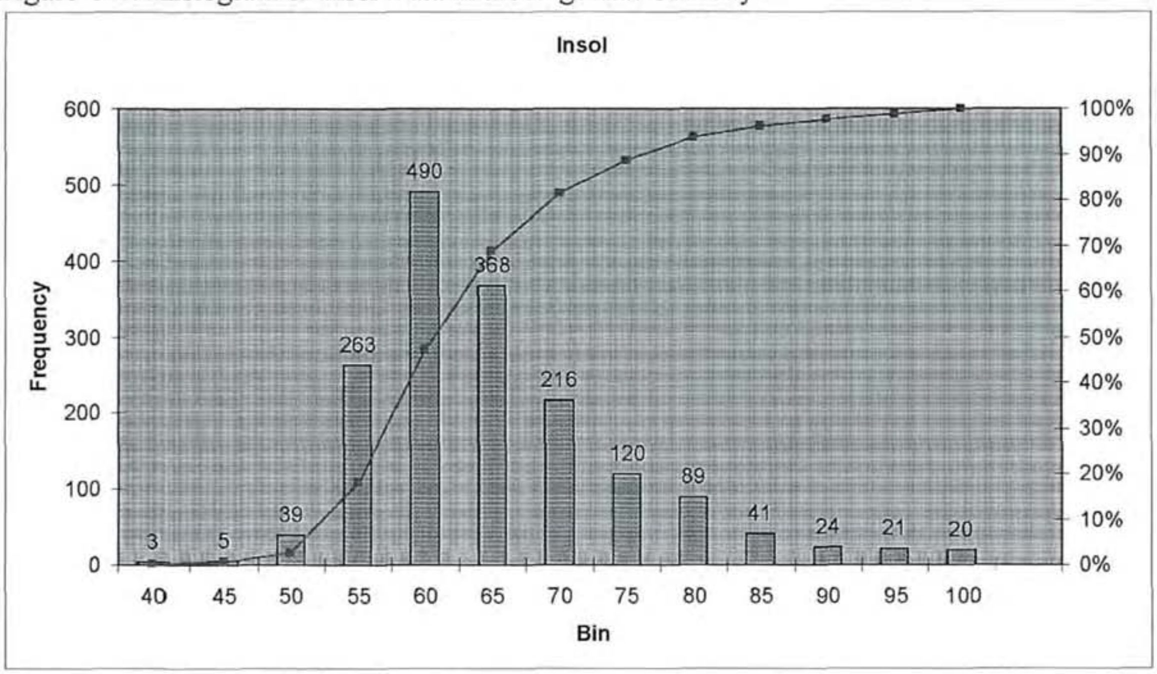


Table C-3: Minolta Y Data in the Argonaut Orebody.

Summary Statistics - Minolta Y	
Mean	68.52
Standard Error	0.21
Median	70.37
Mode	73.39
Standard Deviation	8.56
Sample Variance	73.23
Kurtosis	2.30
Skewness	-1.35
Range	56.76
Minimum	28.87
Maximum	85.63
Count	1700
Confidence Level(95.0%)	0.4070785
COV	12.49%

Histogram		
bin	*Frequency*	*Cumulative %*
40	16	0.94%
45	25	2.41%
50	39	4.71%
55	56	8.00%
60	98	13.77%
65	203	25.72%
70	381	48.15%
75	546	80.28%
80	291	97.41%
85	43	99.94%
90	1	100.00%
95	0	100.00%
more	0	100.00%

Figure C-2: Histogram for Minolta Y Data in the Argonaut Orebody.

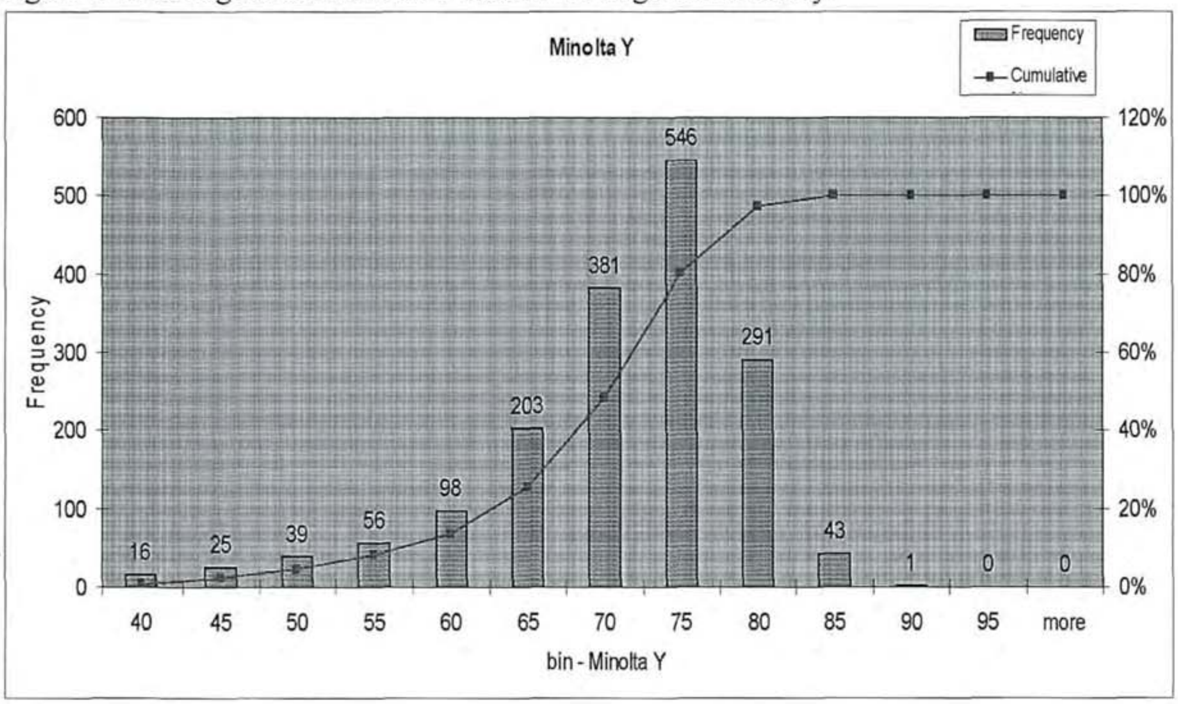


Table C-4: Yellow Index (YI) Data in the Argonaut Orebody.

Summary Statistics - Yellow Index (YI)	
Mean	6.02
Standard Error	0.17
Median	3.36
Mode	3.10
Standard Deviation	7.07
Sample Variance	50.04
Kurtosis	7.10
Skewness	2.54
Range	54.32
Minimum	-3.62
Maximum	50.7
Count	1700
Confidence Level(95.0%)	0.3365
COV	117.50%

Histogram		
bin	*Frequency*	*Cumulative %*
0	37	2.18%
5	1102	67.04%
10	296	84.46%
15	91	89.82%
20	69	93.88%
25	43	96.41%
30	22	97.70%
35	25	99.18%
More	14	100.00%

Figure C-5: Histogram for Yellow Index (YI) in the Argonaut Orebody.

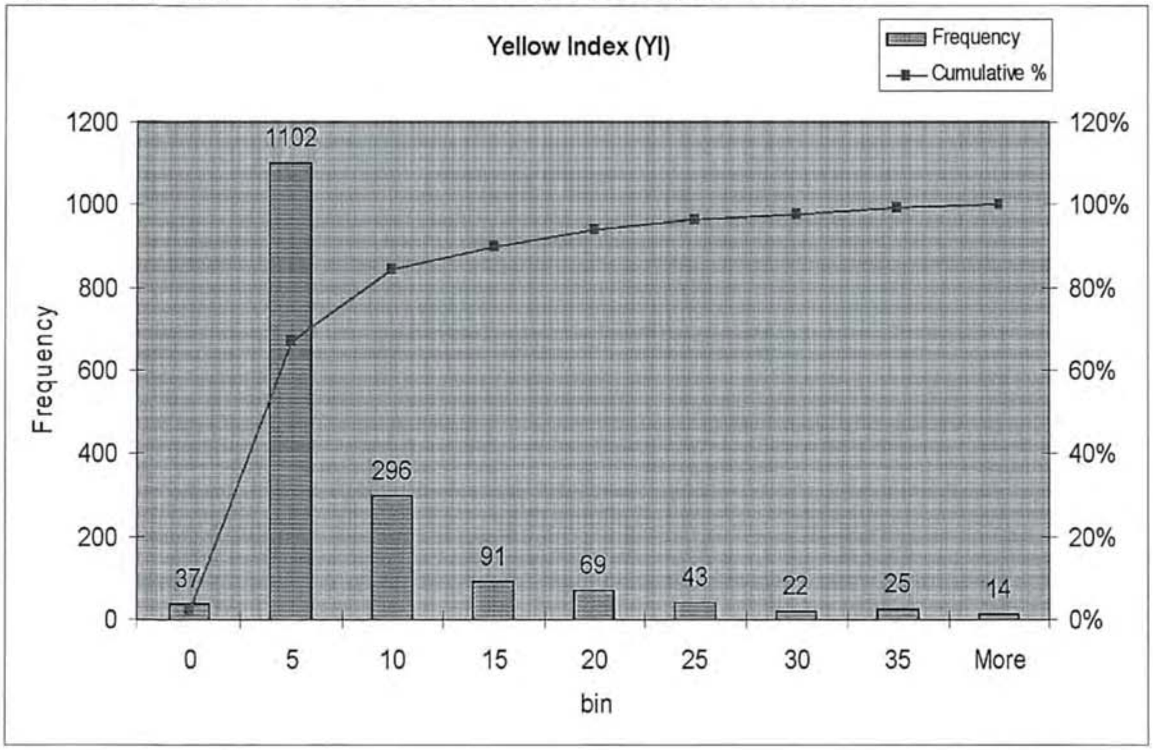


Table C-5: Talc percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

Summary Statistics - Talc (%)	
Mean	53.78
Standard Error	0.28
Median	53.20
Mode	52.10
Standard Deviation	9.41
Sample Variance	88.52
Kurtosis	6.68
Skewness	-0.48
Range	97.32
Minimum	1
Maximum	98.32
Count	1147
Confidence Level (95.0%)	0.5451
COV	17.49%

Histogram

Bin	*Frequency*	*Cumulative %*
35	35	3.05%
40	15	4.36%
45	40	7.85%
50	180	23.54%
55	459	63.56%
60	235	84.05%
65	92	92.07%
70	41	95.64%
75	25	97.82%
80	11	98.78%
85	3	99.04%
90	7	99.65%
More	4	100.00%

Figure C-6: Histogram for Talc percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

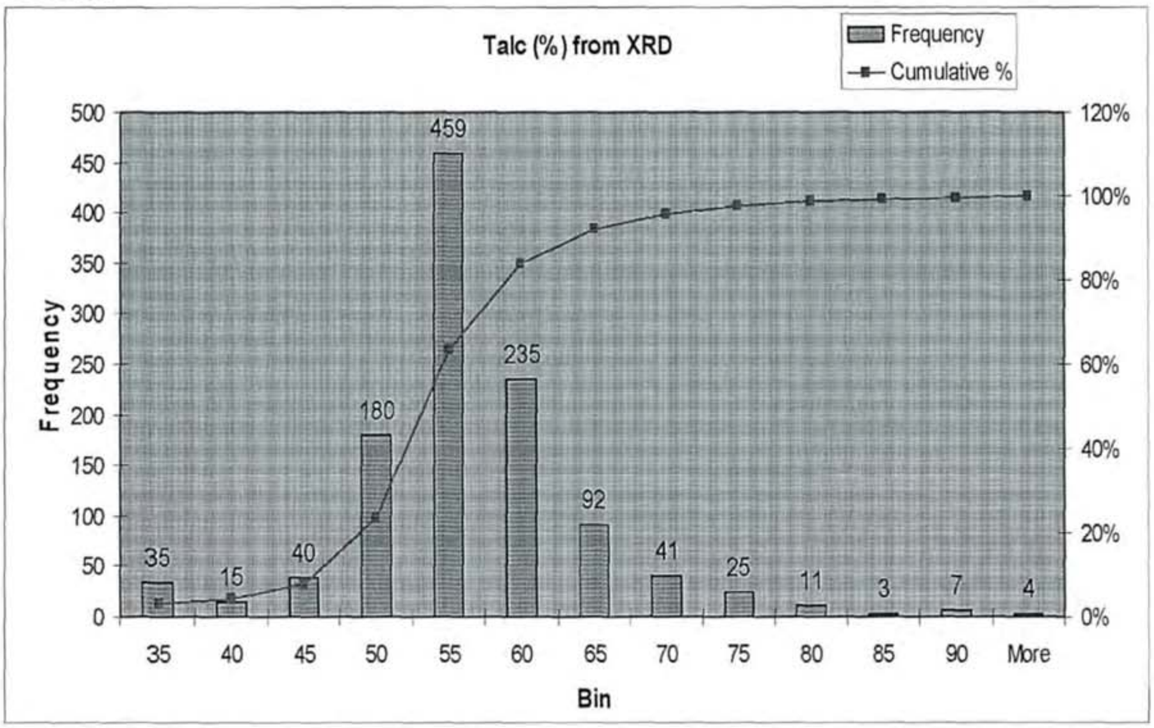


Table C-6: Magnesite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

Summary Statistics - Magnesite (%)	
Mean	34.59
Standard Error	0.33
Median	38.30
Mode	0.00
Standard Deviation	11.13
Sample Variance	123.77
Kurtosis	1.52
Skewness	-1.39
Range	65.41
Minimum	0
Maximum	65.41
Count	1147
Confidence Level (95.0%)	0.6445
COV	32.16%

Histogram		
bin	*Frequency*	*Cumulative %*
10	62	5.41%
15	32	8.20%
20	44	12.04%
25	56	16.93%
30	79	23.82%
35	155	37.35%
40	259	59.95%
45	361	91.45%
50	91	99.39%
55	5	99.83%
60	1	99.91%
65	0	99.91%
More	1	100.00%

Figure C-7: Histogram for Magnesite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

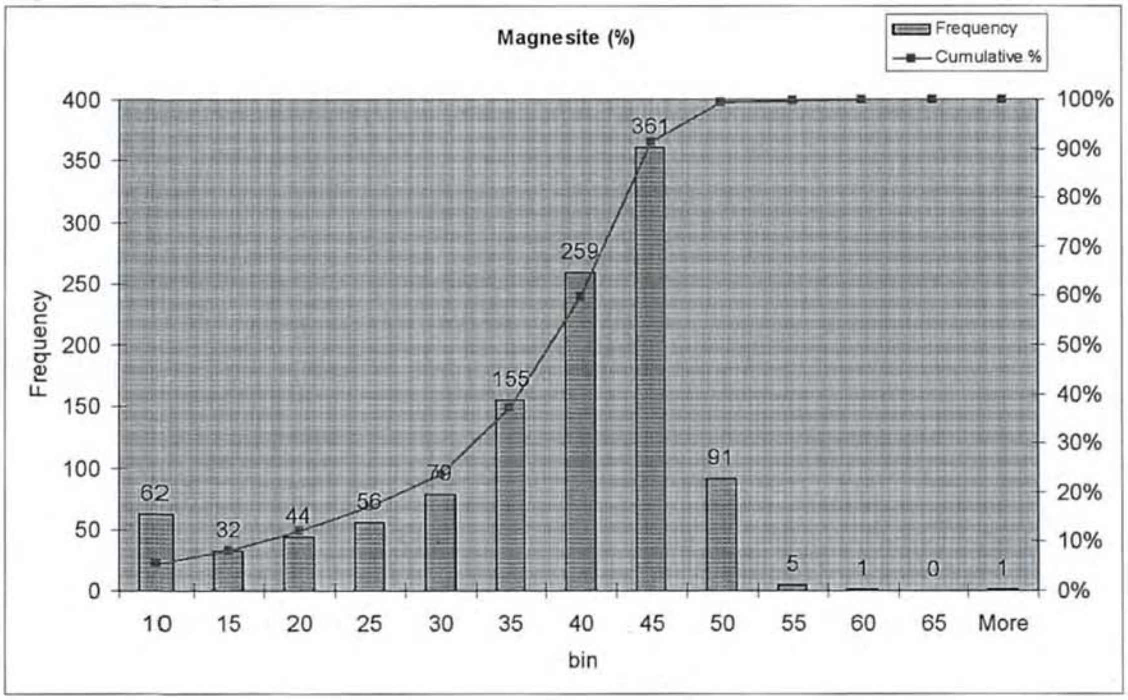


Table C-7: Serpentinite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

Summary Statistics - Serpentinite (%)	
Mean	1.94
Standard Error	0.23
Median	0.00
Mode	0.00
Standard Deviation	7.69
Sample Variance	59.08
Kurtosis	37.92
Skewness	5.74
Range	80.50
Minimum	0
Maximum	80.5
Count	1146
Confidence Level (95.0%)	0.4455
COV	396.01%

Histogram

Bin	*Frequency*	*Cumulative %*
3	1039	90.66%
6	29	93.19%
10	21	95.03%
20	20	96.77%
50	32	99.56%
75	3	99.83%
100	2	100.00%
More	0	100.00%

Figure C-8: Histogram for Serpentinite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

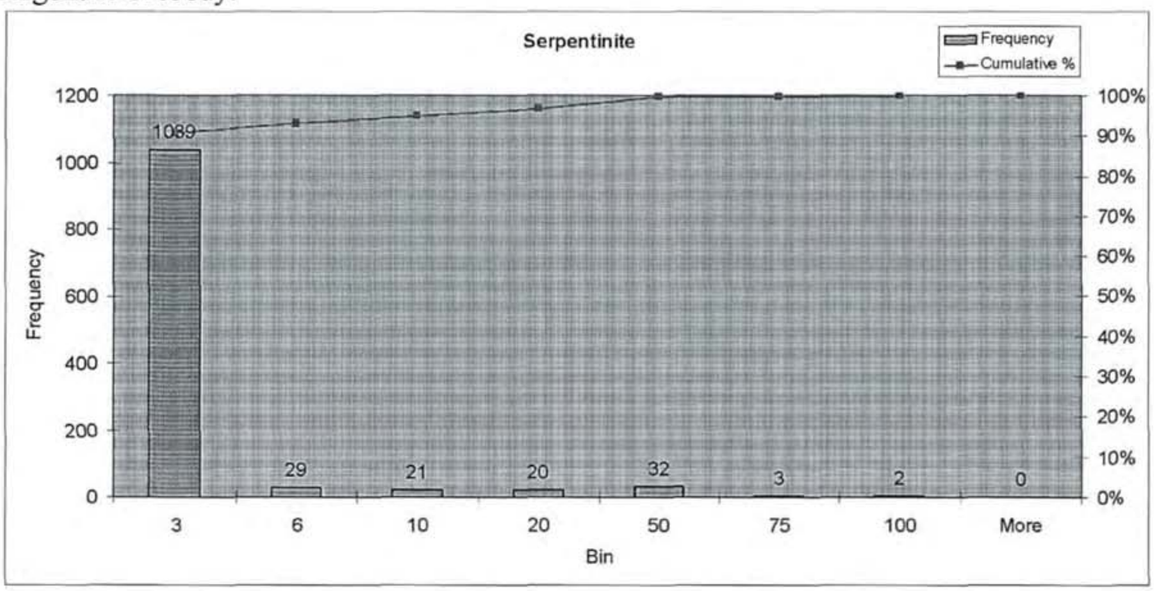


Table C-8: Chlorite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

Summary Statistics - Chlorite (%)	
Mean	4.01
Standard Error	0.16
Median	2.50
Mode	2.10
Standard Deviation	5.27
Sample Variance	27.72
Kurtosis	34.06
Skewness	5.07
Range	57.28
Minimum	0.22
Maximum	57.5
Count	1147
Confidence Level (95.0%)	0.3050
COV	131.19%

Histogram		
Bin	*Frequency*	*Cumulative %*
1	90	7.85%
2	321	35.83%
3	289	61.03%
4	151	74.19%
5	78	80.99%
10	146	93.72%
20	49	97.99%
30	11	98.95%
40	6	99.48%
50	4	99.83%
More	2	100.00%

Figure C-9: Histogram for Chlorite percent from X-Ray Diffraction (XRD) in the Argonaut Orebody.

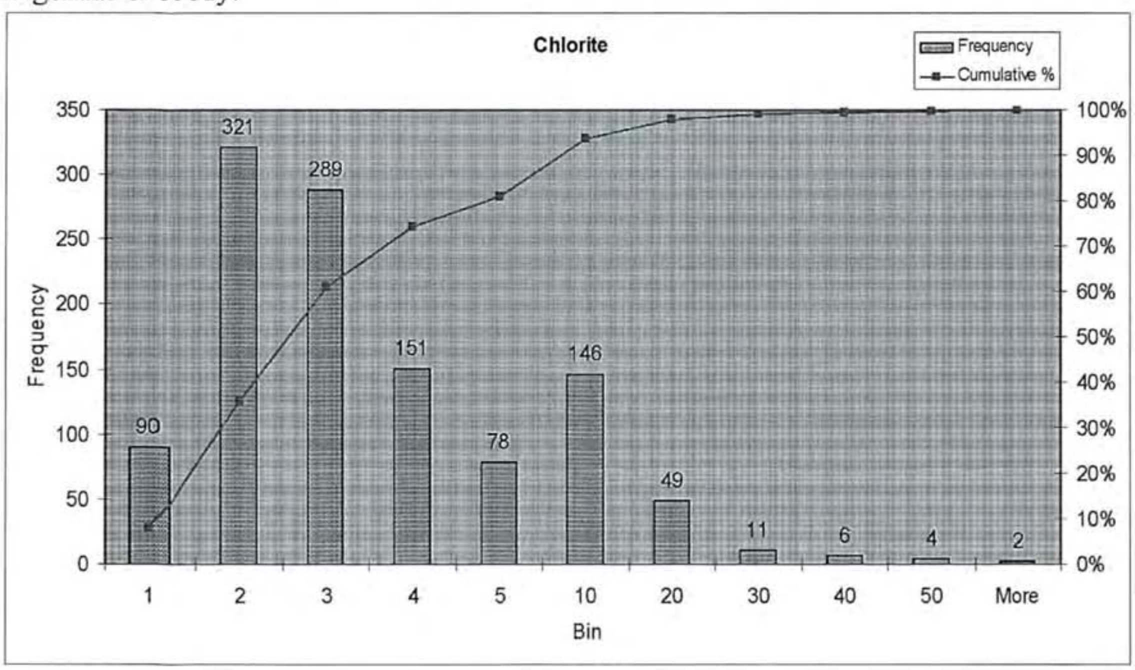


Table C-8: Arsenic concentration (ppm) in the Argonaut Orebody.

Summary Statistics - Arsenic (ppm)	
Mean	63.93
Standard Error	4.36
Median	5.00
Mode	5.00
Standard Deviation	166.24
Sample Variance	27636.88
Kurtosis	25.10
Skewness	4.47
Range	1680.35
Minimum	-0.35
Maximum	1680
Count	1454
Confidence Level(95.0%)	8.5521
COV	260.05%

Histogram		
Bin	*Frequency*	*Cumulative %*
10	918	63.14%
50	233	79.16%
100	94	85.63%
150	47	88.86%
400	95	95.39%
1000	60	99.52%
More	7	100.00%

Figure C-9: Histogram for Arsenic concentration (ppm) in the Argonaut Orebody.

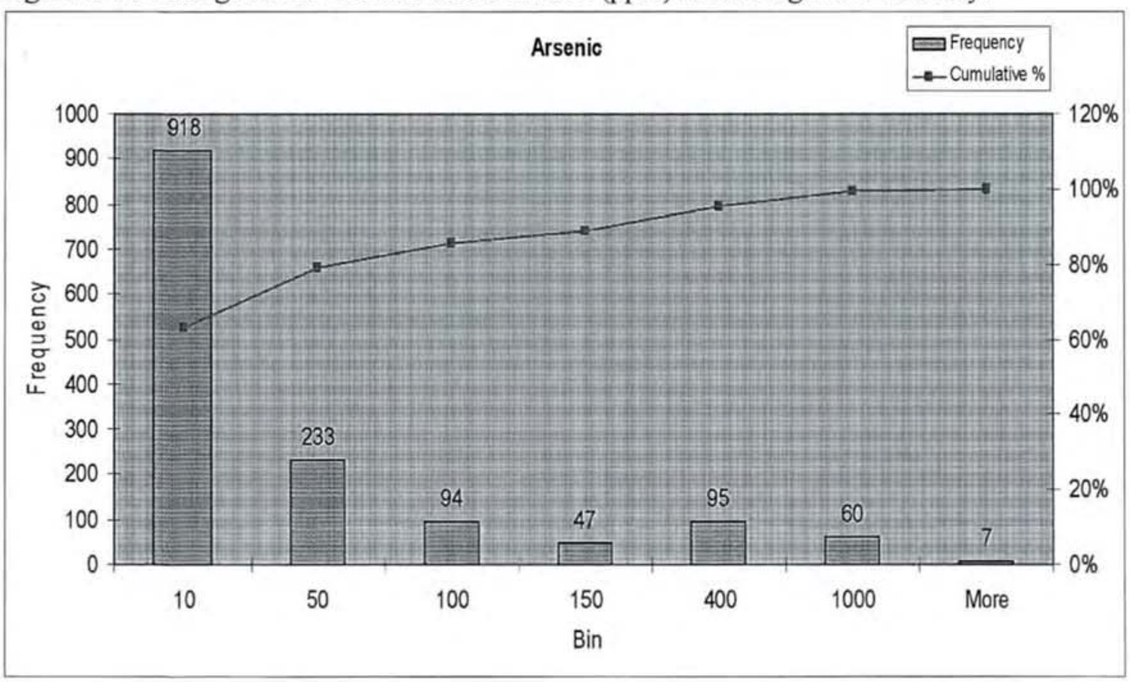
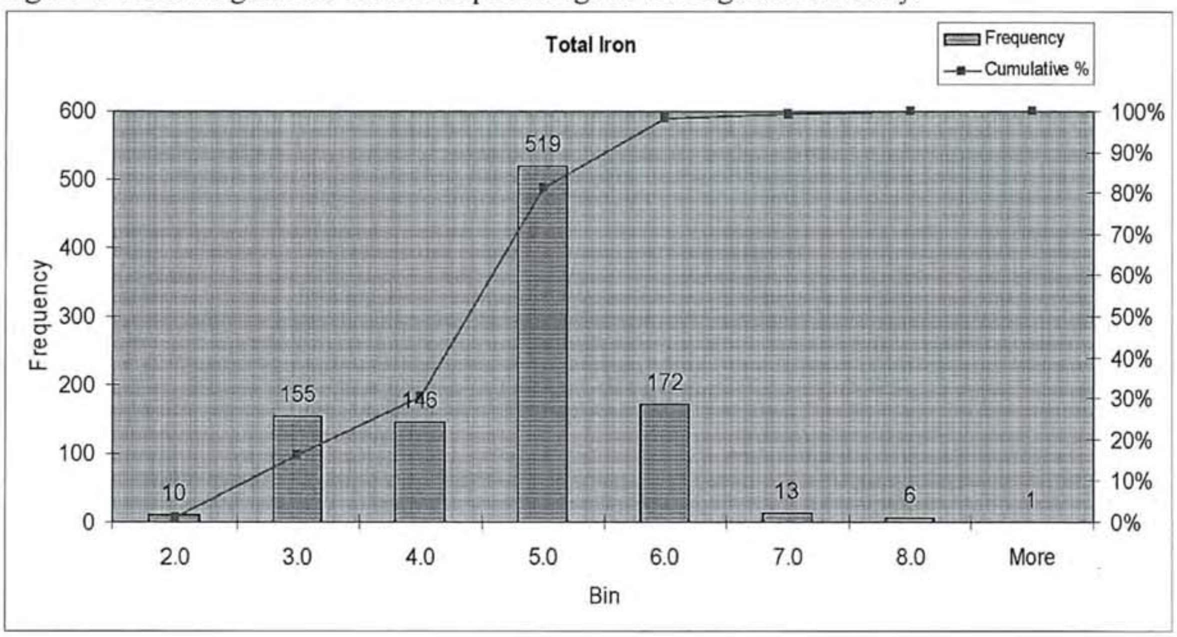


Table C-9: Total Iron percentage in the Argonaut Orebody.

Summary Statistics - Total Iron	
Mean	4.29
Standard Error	0.03
Median	4.58
Mode	3.00
Standard Deviation	0.99
Sample Variance	0.98
Kurtosis	0.18
Skewness	-0.35
Range	7.03
Minimum	1.27
Maximum	8.3
Count	1022
Confidence Level (95.0%)	0.0607
COV	23.06%

Histogram		
Bin	*Frequency*	*Cumulative %*
2.0	10	0.98%
3.0	155	16.14%
4.0	146	30.43%
5.0	519	81.21%
6.0	172	98.04%
7.0	13	99.32%
8.0	6	99.90%
More	1	100.00%

Figure C-10: Histogram for Total Iron percentage in the Argonaut Orebody.



APPENDIX D

Bi - Variant Statistics for the Argonaut Orebody

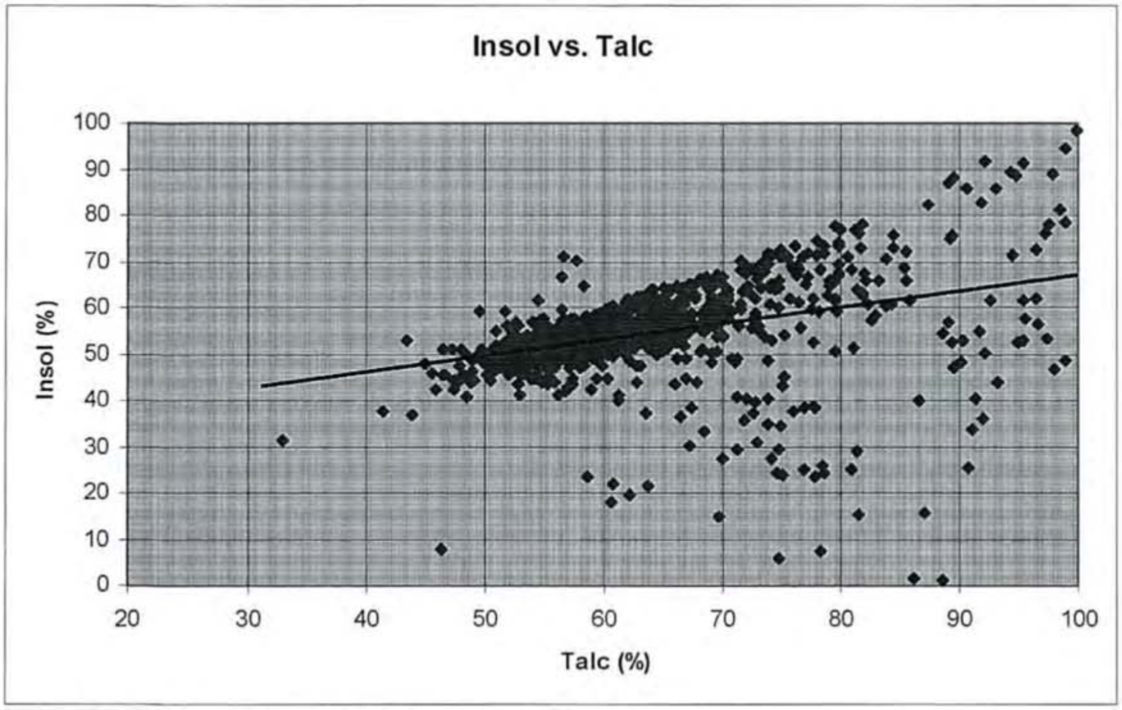


Figure D-1: Comparison of Insol (%) versus Talc (%).

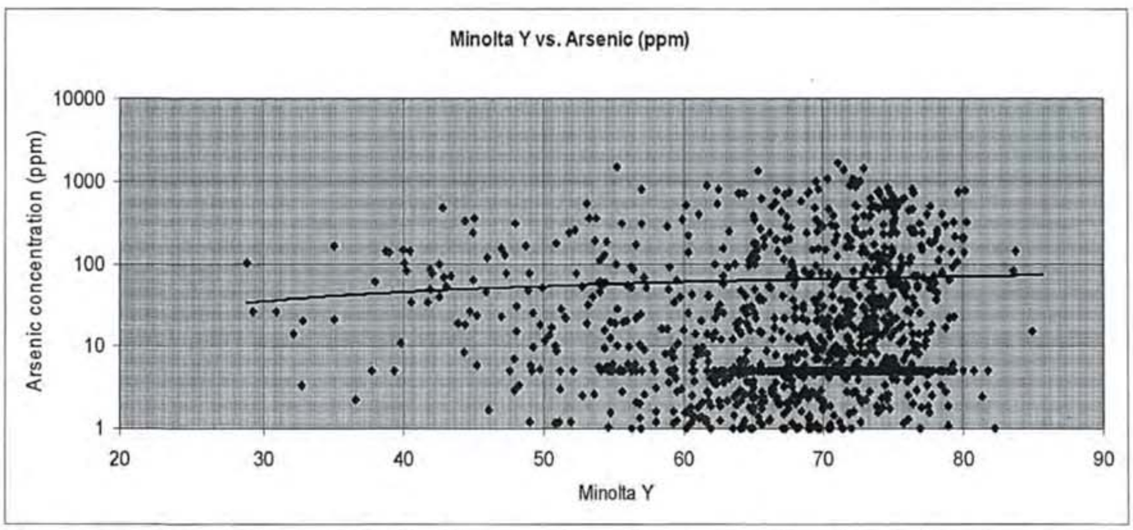


Figure D-2: Comparison of Minolta Y versus Arsenic concentration (ppm). The detection limit on some Arsenic tests was set at 5 ppm resulting in a concentration of data.

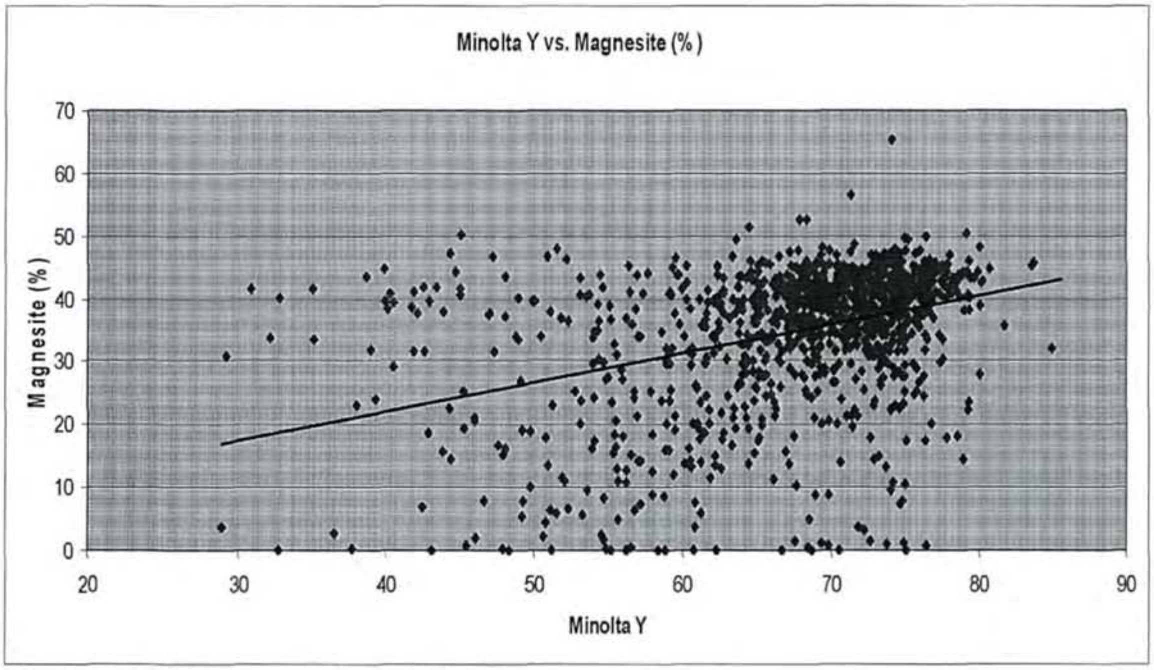


Figure D-3: Comparison of Minolta Y versus Magnesite (%).

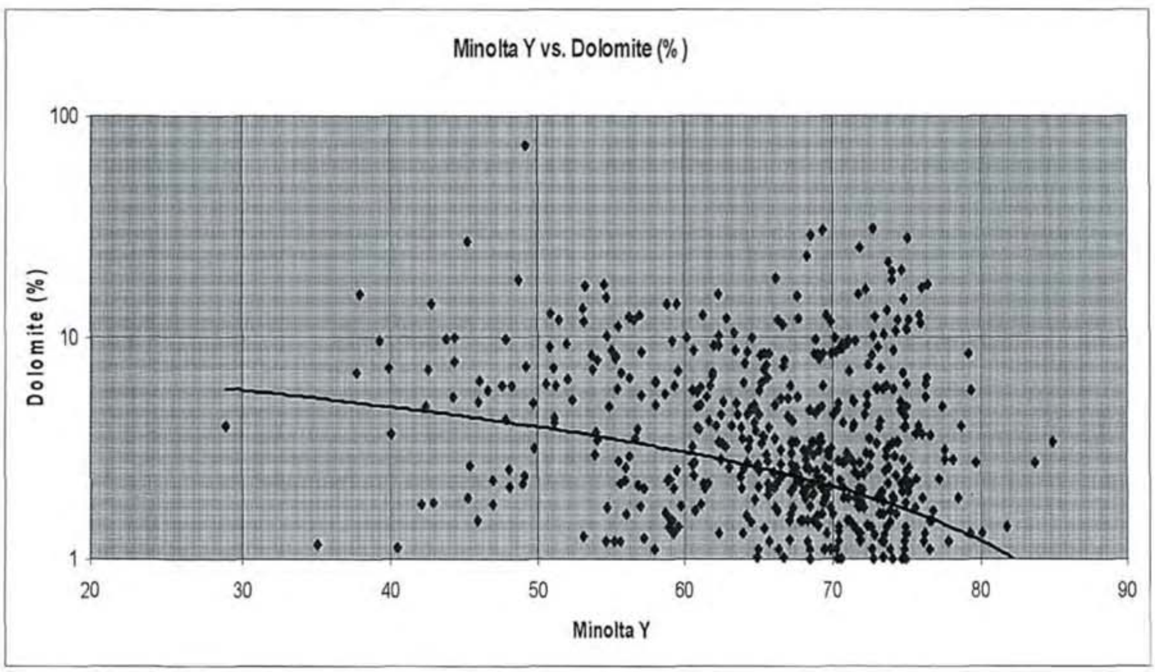


Figure D-4: Comparison of Minolta Y versus Dolomite (%).

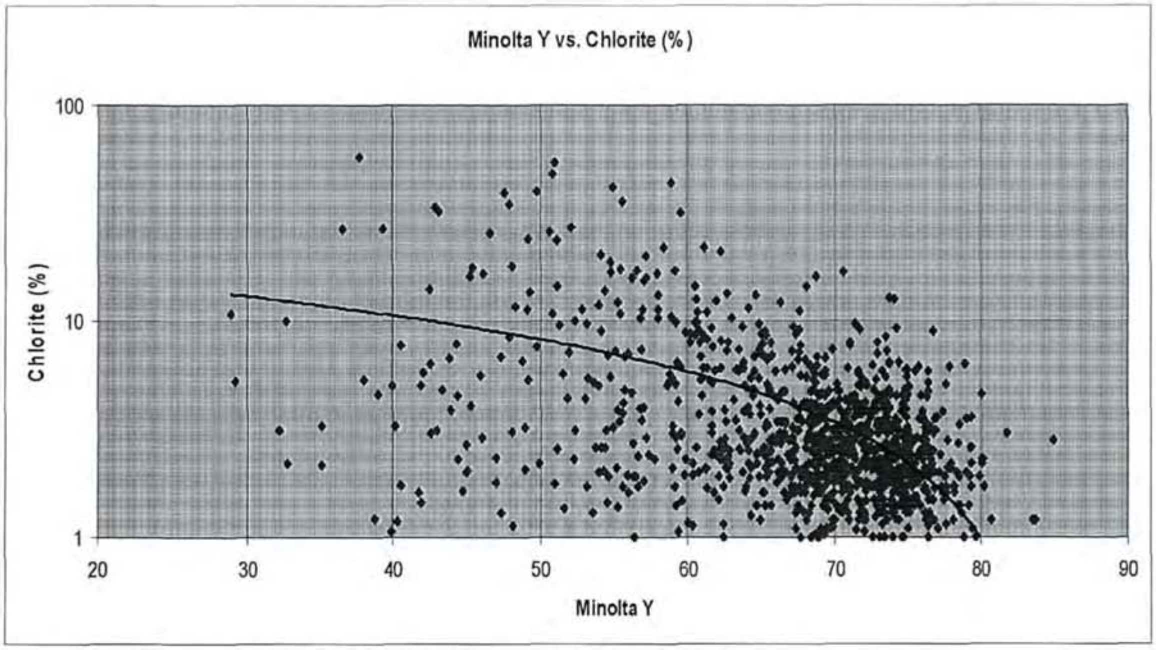


Figure D-5: Comparison of Minolta Y versus Chlorite (%).

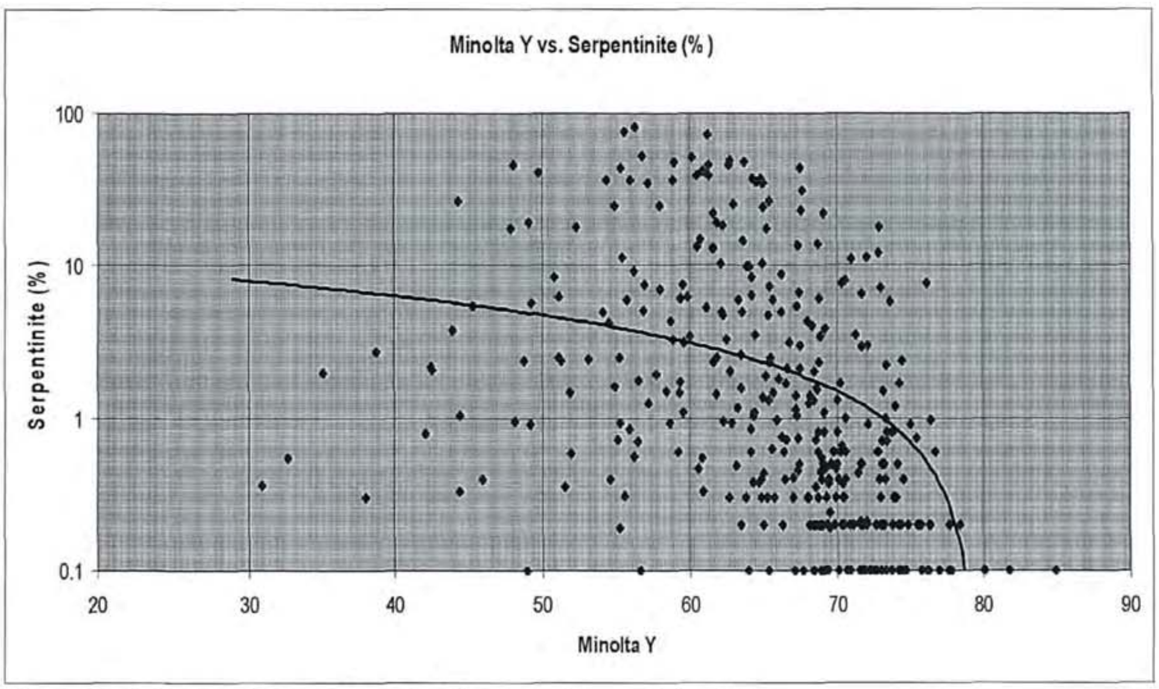


Figure D-6: Comparison of Minolta Y versus Serpentinite (%).

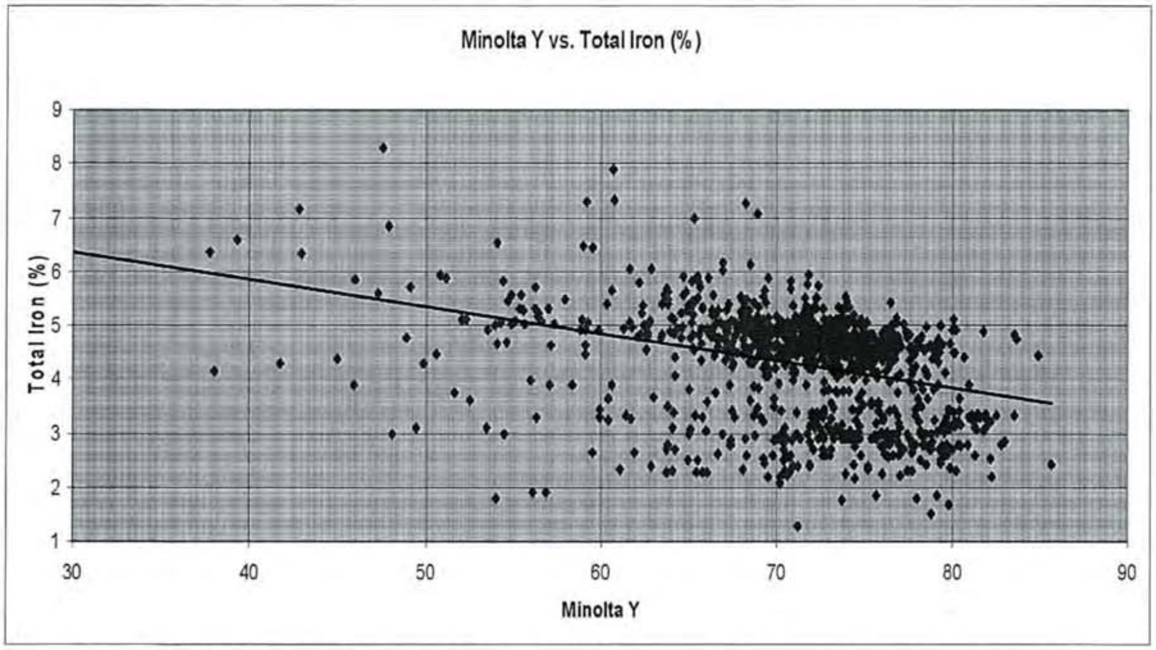


Figure D-7: Comparison of Minolta Y versus Total Iron (%).

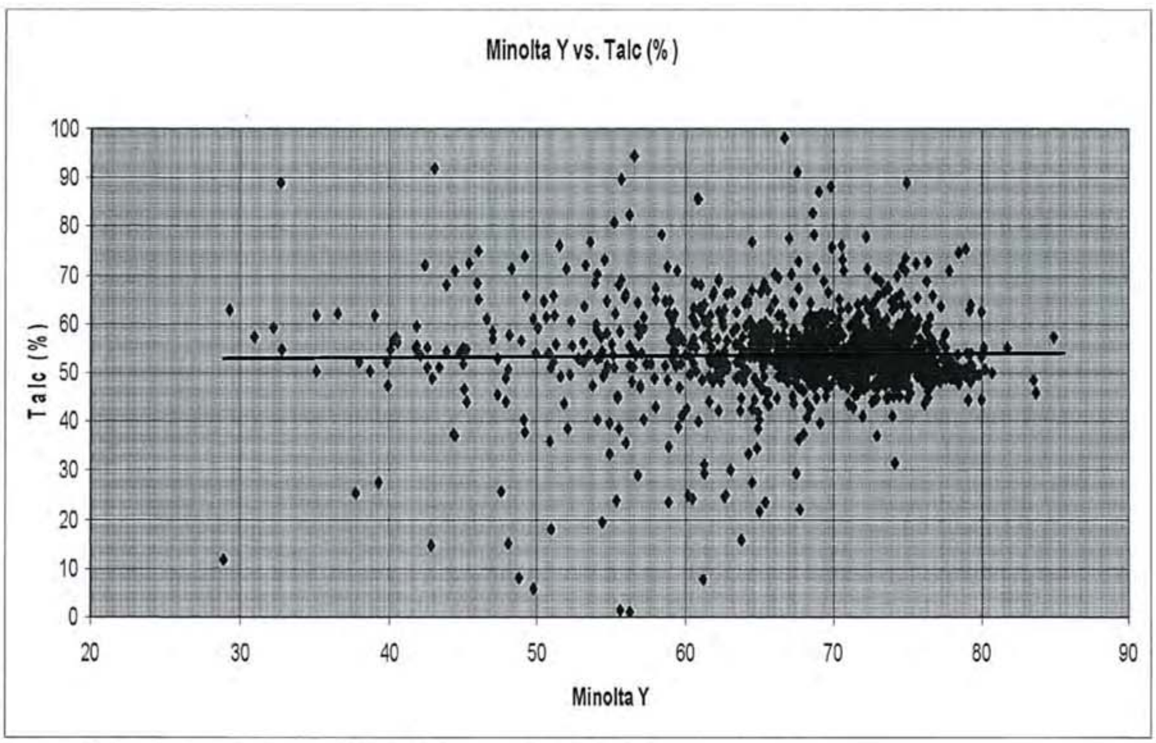


Figure D-8: Comparison of Minolta Y versus Talc (%)

APPENDIX E

Variography

Variography was performed on composited samples of the drilling database. Both 10-foot and 5-foot composites were initially created for comparison. Resultant data show that the two composited databases were similar but the 10-foot composite length was preferred as it provided sufficient smoothing of data.

To start, downhole sample variograms were created for Minolta Y in both the western (ts_w) and eastern (ts_e) limbs of the ore body. Due to lack of data, an acceptable variogram could not be obtained for the western limb (ts_w), see Figure E-1. The modeled downhole variogram for Minolta Y in the eastern limb is shown in Figure E-2.

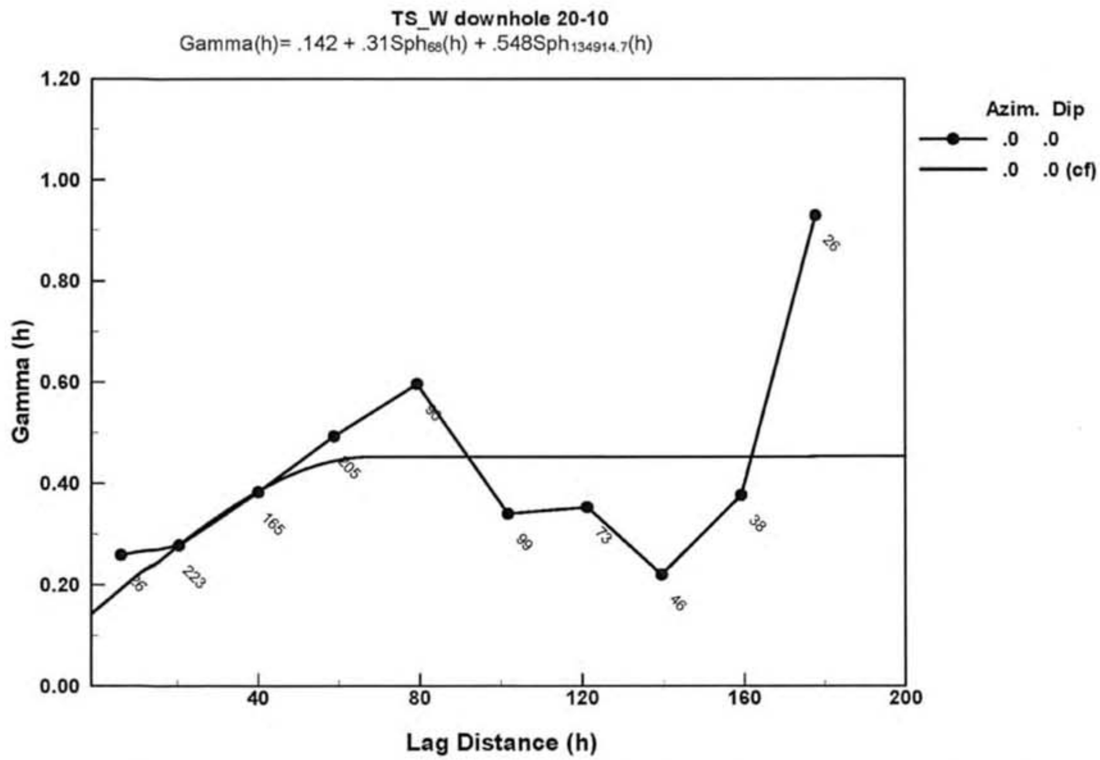


Figure E-1: Modeled variogram for downhole Minolta Y within the western limb of the orebody.

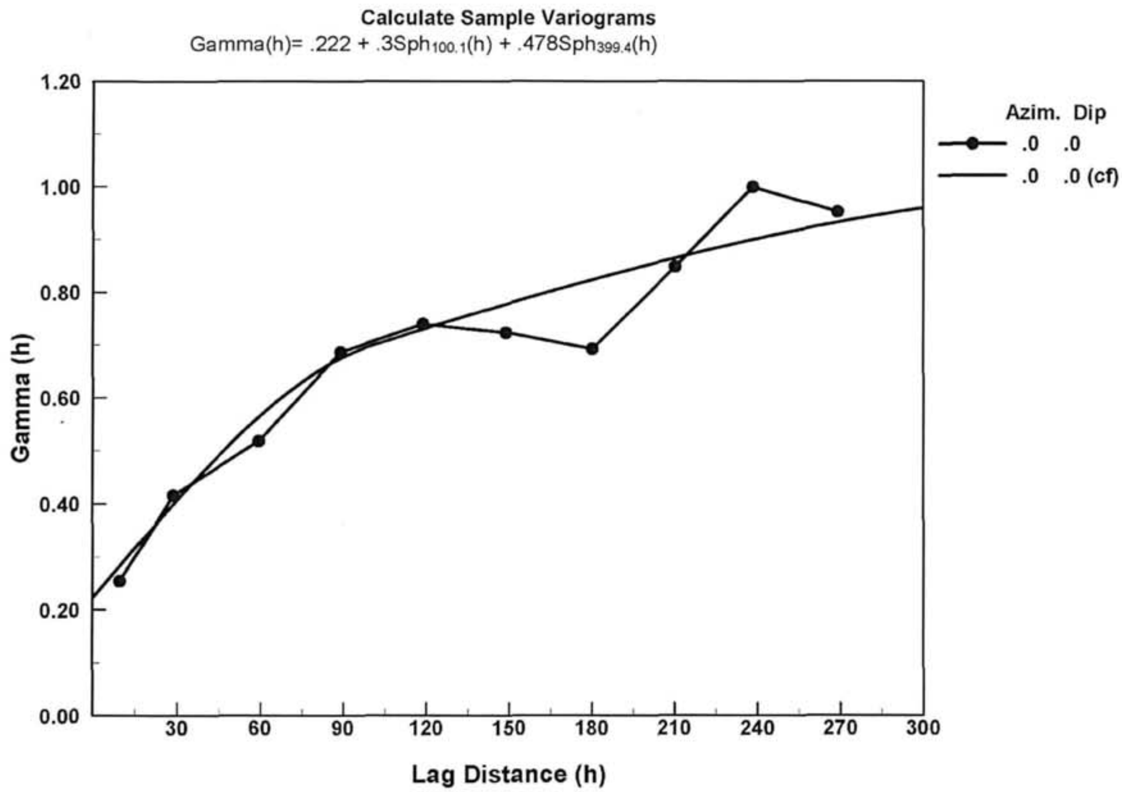


Figure E-2: Modeled variogram for downhole Minolta Y within the eastern limb of the orebody.

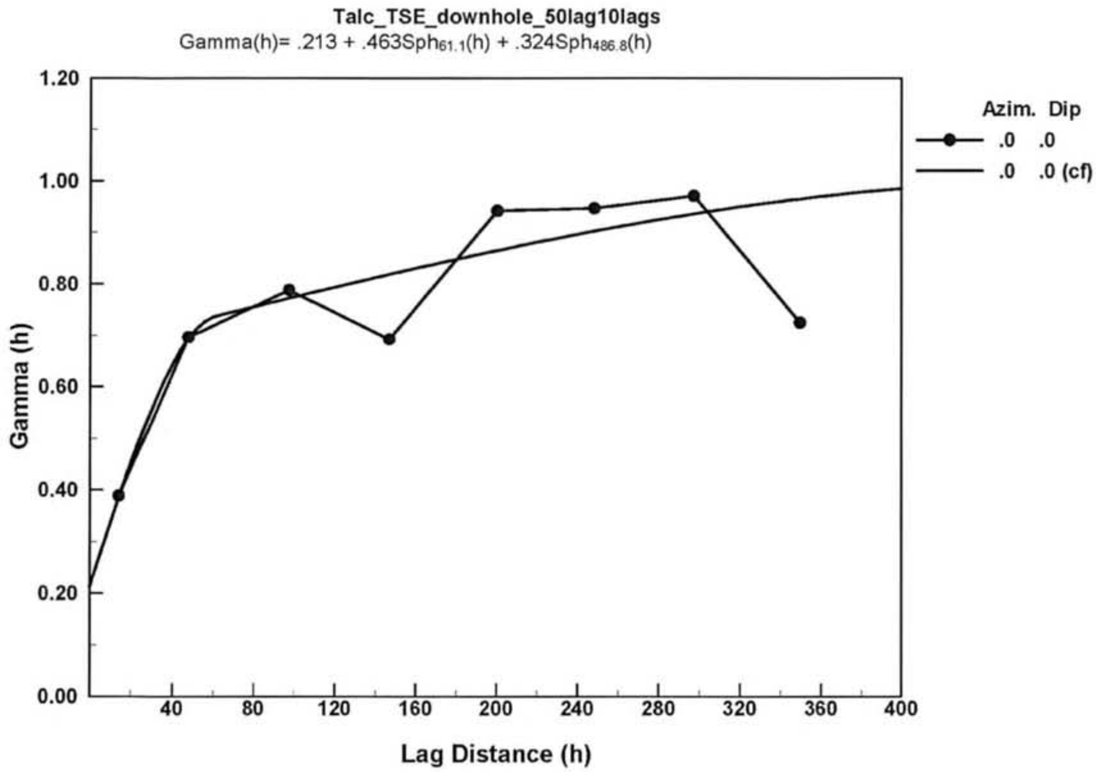


Figure E-3: Modeled variogram for downhole Talc (%) within the eastern limb of the orebody. A lag distance of 50 feet with 10 lags was used.

The percent talc was then ran for downhole variography in the eastern limb of the orebody (see Figure E-3). Now that the nugget had been determined from downhole variography for both Minolta Y and Talc (%), sample variograms were created to determine whether a preferred orientation exists.

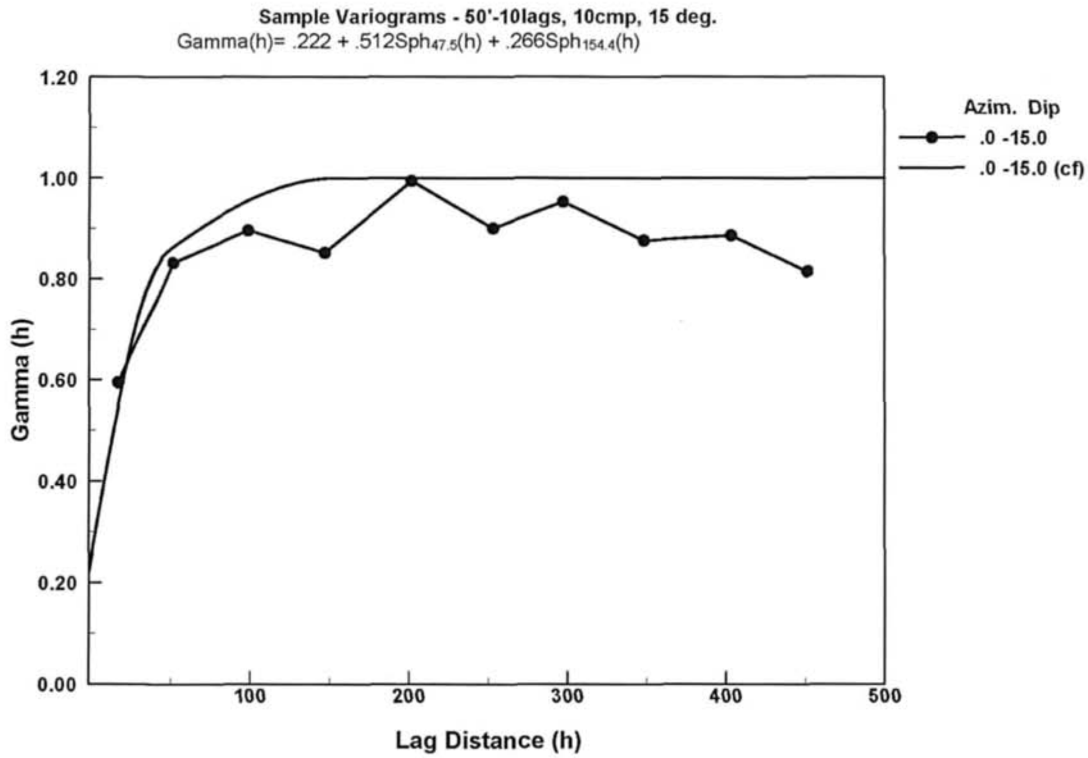


Figure E-4: Minolta Y variogram for eastern ore body. Orientation is at Azimuth = 0, Dip = -15 with lag distance of 50 feet and 10 lags.

APPENDIX F

Block Model Peer Review – March 2008

A block model peer review was conducted by RTM competent persons during the week of 24-March-2008. Significant findings and summary report are included in the appendix.

RIO TINTO MINERALS

YELLOWSTONE MINE
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MEMO

TO: Eric Ronald, John Kinneberg

Cc: Stace Arnston, Dave Marek

FROM: Mike Cerino, Lars Karlsson

SUBJECT: Argonaut Geologic Model Peer Review

DATE: May 29, 2008

Scope:

At the request of Erik Ronald of Rio Tinto Minerals Denver, a review of the Argonaut Talc mine resource model was undertaken by Lars Karlsson of Boron Operations and Mike Cerino of Yellowstone Operations, during the week of March 24th, 2008.

The goal of the review was to answer the following questions:

- Does the resource model provide a robust estimate of tonnage and grade
- Does the geologic modeling reflect the interpretation of the deposit
- Have the appropriate variables been properly evaluated and modeled
- Is the resource classification reasonable
- Is there suitable documentation to support the resource modeling and interpretations

Findings and Recommendations:

The resource model was well thought-out, and provides a good representation of the geology of the Argonaut. Most variables that are appropriate to the deposit have been evaluated and modeled correctly. The strategy used for resource classification is sound with respect to JORC requirements. Resource modeling and interpretations are well documented in the 2007 CP report. This review highlighted some areas of commendable practice, and some opportunities for improvement.

Good Practices:

- Excellent definition of deleterious minerals (As, Amphiboles) in model.
- Minor pit mapping, which is a recent occurrence, has provided real-time field information and an invaluable resource to help modeling.
- Database has been compared line by line against original data.
- Sample rejects are now retained for future use.

- Drill databases are duplicated and backed up in multiple areas.
- Underground locations and geology have been integrated into and separately domained in the deposit model.

Recent efforts in pit mapping, collating known geologic and drilling information, and modeling using a cross-sectional methodology have created a block model that is realistic from a geologic perspective. As noted below, there is some work to be done to address some details, particularly in sampling and assaying; however the basic geologic methods used have generated a geologic model that appears robust and reliable. Discrete domaining of stopes and lamprophyre dikes is a critical practice. Grade and volume estimates are much more reliable and the ability to validate the model is significantly enhanced with the use of such domains.

Improvement Recommendations:

- Color error due to sample grind / screen size inconsistency in samples could be significant. Sample preparation procedures should specify screen size, and type of equipment if necessary. Old samples should be validated or re-checked if available; or a twin sample hole drilled to validate results in critical mining area.
- Assay (color, grind size) results have not been validated with duplicates, standards. QA/QC standards should be incorporated into the sampling and assaying procedure. This should include duplicates, standards, blanks, round robin checks, etc. 1 in 25 is a common rate of insertion for each.
- Infill drilling results should be checked for bias considering that the fines are separately sampled from the coarse material fraction.
- Density information is not well documented. Core density should be checked and documented for each rocktype. Establish a density factor for each rocktype, and create density curve(s) for mixed zones of talc, talc-carbonate, and serpentinite. Depending on variability, density could be another factor estimated during block modeling and grade estimation.
- Drilling orientation is not supported with downhole surveys in most cases. Use digital downhole drift surveys for future drilling, in particular if drilling angle holes. Acid-bottle surveys can be unreliable.
- Orebody faulting could be better defined, and possibly be used with lithologic contacts for domaining.
- Variogram spacing could be increased from 5 degrees to 15 or 30 degrees to decrease local variation.
- There is not currently a reconciliation system in place to validate modeling with production. A program of reconciliation to compare infill, core, and blasthole drilling, geologic models, and mine and mill production should be implemented. Defining material and information flows and data collection points can be an educational first step in defining the reconciliation process.
- Add the specification for serpentine to the Crude Ore Specification Chart.
- Data archiving could be done on CD to preserve original data / model integrity.

There is some resource risk associated with the above findings. The first four items (grind size, QA/QC, drilling bias, and density) in particular probably pose the most significant risk. An estimate of the magnitude of the risk is difficult to pose without more detailed study. However it is likely that local estimates of grade and tons are more at risk than global estimates.

Some of the higher risk items can be addressed initially without new drilling. Field sampling could be carried out on various ores, and tests can be run in the lab to determine the sensitivity of the ores to density / grind size variance. Some "rules of thumb" could be generated and applied to a risk analysis of the model. Reconciliation of blasthole and field samples to core data can also be an easy check; for instance compare a single core hole to a blasthole drilled in exactly the same location; it would essentially act as a twin, to validate local model results.

A composite set of notes taken during the Argonaut peer review was compiled and reproduced for review in the appendix.

APPENDIX

Model Review

The following list of bullet points is a composite set of notes taken during the peer review.

1. Data Collection

- Core drilling sample testing includes:
  - XRD mineralogy – amphiboles primarily (full & short Scans)
  - Elemental analyses – 41 element package
  - Color – Minolta YI
  - Atomic Absorption – Arsenic
  - Insol – derives percent talc

- Infill (rotary) drilling samples
  - XRD mineralogy – amphiboles
  - Atomic Absorption – Arsenic
  - Color – Minolta YI
  - Insol – derives percent talc
  - PLM – fibers

- Ratio of rotary infill:core drilling is 1:3 on a footage basis.
- Core drill spacing roughly 100' average, but not on grid.
- Infill drilling roughly 50' spacing.
- See table of crude ore grade specifications in section 4 of CP report (page 22).
- Drilling database goes back to 1972 – information to build model.
- Issues with sample integrity of infill drilling, especially when wet, two samples generated from same interval by air track drill; chips and powder. Ideally operator would drill 10ft then stop to clean hole, then get out of the cab to collect both the chip and powder samples. Some samples are wet, some are dry – could create a bias in sampling?
- Core samples are given preference in the geology interpretations, infill data is supporting (subordinate). When infill data does not support core data, core data takes preference and infill is disregarded.
- Down-hole surveys for core drilling are largely nonexistent – some acid test surveys exist. Rotary drilling was not surveyed, and includes angled and vertical holes.
- Core drilling, infill drilling, limited surface mapping and underground mapping provide basis for construction of the orebody solids.
- Minimal surface mapping has been done until recently; some local dike mapping has been done.
- Argonaut drill samples (core & infill) testing does not include QA/QC protocols or "round-robin testing between labs.
  - Leco (Insol) Ludlow plant laboratory
  - LOI Denver laboratory
  - Chemex – multi-element testing
- Grind control for color testing is based on the Alpine screen - % passing 325 mesh screen. Most of the older drilling does not have grind control on samples, giving some uncertain results for brightness testing. Brightness data is not correlated with screen size. Also

type/brand/characteristics of equipment used for sample preparation are not consistent. Approximately 90% of the samples in the data set fall into this category. Color error could be significant.

- Some pulps are available from some of the core drilled in the past ~5 years.
- Assay rejects are now saved; this has begun recently.
- Density is not routinely checked. Current model uses old assumptions.

2. Data Validation

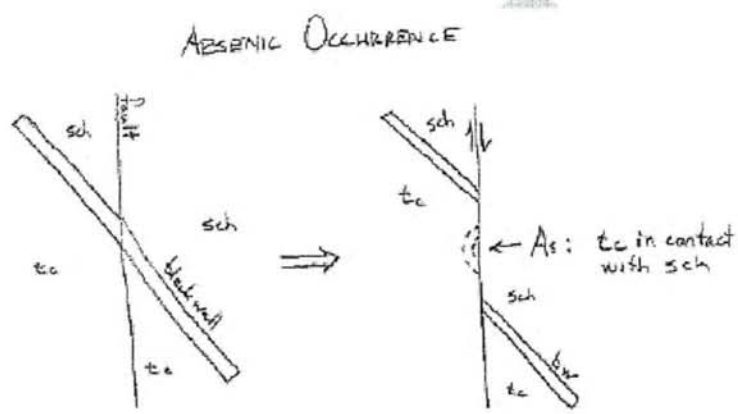
- There is not a complete set of original drill log copies available at the Denver corporate office.
- Original data is entered into MS Excel and edited for accuracy. Data is converted into ascii.csv format for uploading into Vulcan ISIS database.
- The uploaded data is validated with the original data as well as to make adjustments in the Vulcan model. Line by line Vulcan database review has been done.
- The electronic data set is backed-up in multiple redundant locations: Local C: Drive, local network, and external hard drive.
- Multiple data versions are backed-up as V_1, V_2, V_3, ...
- A suggestion was made to burn data on CDs to permanently archive data.
- Sample recoveries are measured on core since 2002, not infill drilling.
- Domaining: 8 divisions in CP report (pg. 16) based on lithologic divisions. Lithologies divided into East, West, and Central zones. Lamprophyre cuts through East zone (22 dikes).
- No structure (faults) are built into the model.
- Ts = ore with <10% serpentinite
- St = ore with >10% serpentinite
- There have been no repeats, blanks, or standards used to validate the drill sample data.
- Procedures used in each lab are not necessarily consistent (equipment, grind size, procedures may vary).
- No round robin testing between labs has been done.

3. Compositing

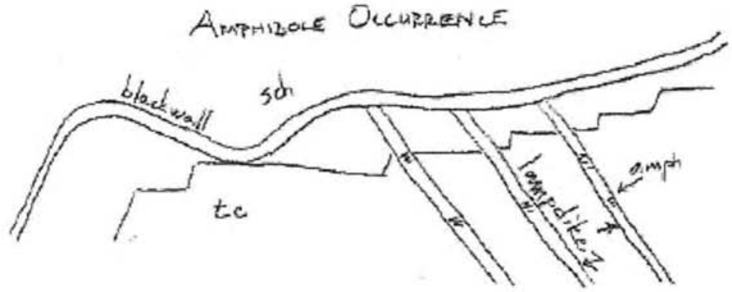
- Typical sample lengths are 10ft, bench heights are 20ft.
- Old samples were composited without regard to rocktype; waste was not characterized; recent sampling characterizes waste and composites within rocktypes.
- Composites lengths are either 5ft or 10ft. Variography gives the smoothest curves with 10ft lengths.
- SMU is both 10x10x10 when splitting bench, but goes to 20x10x10 when entire bench is shot.
- Residual sample intervals ≤ 3 are disregarded to build composites.
- Basic statistics on 10' composites show close agreement between raw data and composites
- Statistics by domain will be run against composites to verify.
- Variability of densities seems high. Serpentinite alone varies between 169 and 192. End members consist of talc, talc-carbonate, and serpentinite. Need external lab to do specific gravity testing on suite of different rock types. Consider some bore-hole geophysics to measure density to correspond to core samples.

4. Block Model Construction

- Block dimensions are 10x10x10 for the ore zone, schist 40x40x40, and dikes, stopes, and chlorite are 2x2x2. Sub-blocking is tied to basic geology.
- GEOMOD codes are assigned based on lithology and domains. Domains are ts_e, ts_w, st_e, st_w, serp_e, serp_w, serp_knob, lamp, chl, ug_air, xwaste, and sch (domaining is done by rocktype and stopes). These are also domain (zone) names.
- %Talc from XRD is used for estimation of blocks – LOI or Leco Insol data is present but not used for % talc determination.
- Arsenic occurrences are well defined and tightly constrained in specific zones - usually in contact with schist. There is good internal geologic understanding of the occurrence and good operational control for selectivity.



- Amphibole occurrences are controlled by lamprophyre dikes – it occurs within the lamprophyre.



- Crude ore grades produced from the mine are coded in the model with the following numbering:
    1. "alpha"
    2. "mine run 5810"
    3. "mine run 5810 blend"
    4. "high bright"

5. Block Model Estimation

- A large number of variograms (approximately 200) were presented with seemingly erratic sill, range, and nugget values; 5 degree spacings in azimuth and dip. Consider increasing spacing to 15 or 30 degrees to help smooth the variograms – maybe 5 degree spacings exposes localized variation.
- Down-hole variograms are used to characterize spatial variation of As.
- Three grade estimation methods are used; nearest neighbor, ID3, and ordinary kriging. Results from each are reasonably comparable.

6. Block Model Validation

- Comparison of drill holes values for min_y and % talc with block estimates where dh pierces block, shows good agreement.
- Comparison of dh intercepts through lamprophyre dikes with rock type value of block shows good agreement.
- Reconciliation over time will add increased confidence to the block model.

7. Resource Classification

- Also recommend that talc blocks in contact with lamprophyre dikes be reclassified either to waste or to the "inferred" resource category. These blocks should not be included in the reserve.
- Reserves are computed from resources by application of a 3 year rolling average recovery derived from reconciliation.
- Resources classes: measured = 0ft – 100ft, indicated = 100ft – 150ft, and inferred is > 150ft.
- Blocks are assigned a resource class based on the distance to a minimum of two nearest neighbor assay values.

8. Reconciliation

- No reconciliation is being done at present due to inadequate blasting control and ore control practices. And production data must be manually collated. A new geologist to be hired will assume responsibility for data collection and generation of reconciliation factors.
- Good tracking of truck counts; ore is delivered to three locations: 1) Ludlow mill, 2) Rainbow ore pads, and 3) oversize to north ore pad.
- Consider building a chart that shows material flow, sample points, and sampling methods. This would be a good start to build-in data collection to support reconciliation.

9. Documentation

- Block model reporting in CP report is a good. Can add subsequent change documentation to CP report.
- Consider permanent back-ups on CDs in off-site storage.

10. Recommendations for Improvement

1. Digital down-hole drift surveys for all future core drilling – no more acid bottle surveys.
2. Create sample preparation procedure specifically addressing grind and screen size, type of equipment used.
3. Incorporate QA/QC practices with the sampling/assaying procedures (standards, duplicates, blanks). Specify "limits of acceptance" for variance (i.e. "duplicate samples showing more than 5% variance must be re-analyzed").
4. Re-assay old core rejects where available using new procedures.
5. Establish gradational density factors (density curve) for mixed zones of talc, talc-carbonate, and serpentinite. Use values for density estimation into block model.
6. Check, validate, and document density values. Core program should check density in a regular percentage of future drilling.
7. Construct variograms with spacing increased from 5 degrees to 15 or 30 degrees to decrease local variation.
8. Confine blocks designated as resource to the life of mine pit.
9. Initiate a reconciliation program with needed enhancements to blast-hole controls, grade controls, definition of material flows, and locating data collection points.
10. Add serpentine specification to Crude Ore Specification Chart.

11. Positive Findings

1. Excellent definition of deleterious minerals (As, Amphiboles) in model.
2. Pit mapping, which is a recent occurrence, has provided real-time field information and an invaluable resource to help modeling.
3. Database has been compared line by line against original data.
4. Sample rejects are now retained for future use.
5. Drill databases are duplicated and backed up in multiple areas.
6. Stopes have been integrated into and separately domained in the deposit model.
7. Sample rejects are now retained for future use.
8. Drill databases are duplicated and backed up in multiple areas.

APPENDIX G

Mine Plan Progress Maps – Updated July 2008

Progress Plots

The images below show the phases and benches mined in each year over the next 5 years.

2008

2009

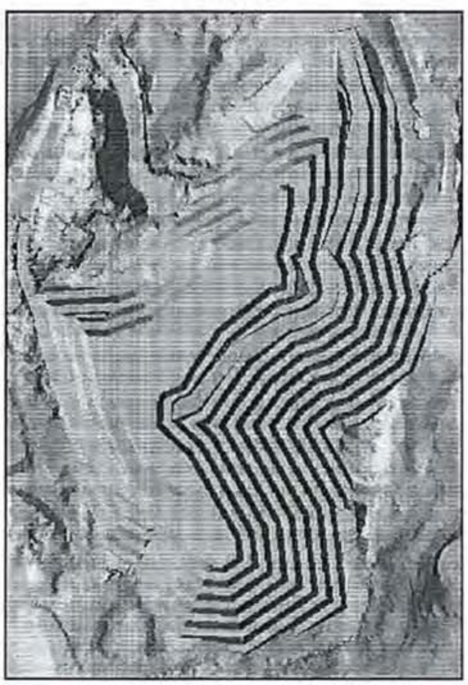
2010

2011

2012

At the end of year 32, the bottom of the final pit is at 1380. The images below show the mine at the end of the mine life.

Plan View



Rotated View